The Effects of a Graphic Organizer Training Package on the Persuasive Writing of Middle School Students with Autism

THESIS

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Abstract

This study examined the effects of a direct instruction and graphic organizer intervention package on the quality and quantity of persuasive writing of middle school students with Autism Spectrum Disorder (ASD). Quality of students’ writing was measured via analytical rubric scores and correct word sequences. Quantity was measured by assessing total words written. Students were between the ages of 12 and 14, and all four participants had been diagnosed with ASD. A multiple-baseline across participants design was used to evaluate intervention effectiveness. Findings indicated that the quality and quantity of the students’ persuasive writing improved as a result of the intervention.
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CHAPTER 1
LITERATURE REVIEW

Writing: A Necessary Tool for the Future

The skill of writing becomes increasingly important as students progress through secondary and post-secondary schooling and beyond into professional environments. Not only is writing important in students’ academic and future professional lives, it provides an outlet for students to chronicle and reflect on life experiences. Reflecting on life’s experiences through writing can be beneficial both physiologically and psychologically (Smyth, 1998). Writing is a form of communication that produces a permanent product, and it allows humans to communicate with each other without being in the same location. It is a daily activity for all people ranging in format from informal texts to polished letters. As our workforce becomes increasingly well-trained and demands for education continue to rise, so too does the demand for employees with fluency in communication skills, including writing. Successful participation in most educational, work, and social settings requires solid writing competence (Delano, 2007).

Struggling Writers

Despite the fact that proficient writing skills are sought after by most employers, education in the United States increasingly falls short in preparing students to be successful writers. According to the 2011 NAEP writing report card, a mere 24% of
eighth graders were writing at a proficient level. The NAEP proficient level represents an ability to accomplish the communicative purpose of writing. In other words, the student’s writing effectively informs or persuades the audience. In addition, 54% of eighth-graders and 52% of twelfth-graders performed at the basic level in writing in 2011. The basic level indicates partial mastery of the prerequisite knowledge and skills that are fundamental for proficient work at each grade. Further, 20% of eighth graders and 21% of 12th graders performed at the below basic level. Finally, only three percent of eighth- and twelfth-graders in 2011 performed at the advanced level (NAEP, 2011). These results indicate that writing is an area of need not sufficiently addressed by current instructional strategies for a large percentage of U.S. students.

Students who do not learn to write proficiently are at a disadvantage throughout their education, and these deficits persist into adulthood. In school, weaker writers are less likely to be able to express their learning to teachers who often assess student progress through writing (Graham, 2006). Writing has become a focus for educational reform; however, with the adoption of the Common Core Standards by many states in the U.S., comes an expectation that students will master a variety of writing styles and develop advanced levels of sophistication in their writing (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). For example, students in the eighth grade are expected to write arguments with clear supporting details, narrative pieces, and informative/explanatory pieces. There is an eighth grade standard that closely aligns with teaching persuasive writing (CCSS.ELA-Literacy.W.8.1: Write arguments to support claims with clear reasons and relevant evidence). Students are also expected to conduct research to learn more about writing
topics and complete a range of writing assignments over brief and extended time frames. Meeting these increasingly rigorous expectations demands a higher level of student performance and better methods of instruction on writing.

Students who fail to learn to write well also struggle when they enter post-secondary environments. Thirty-five percent of high school graduates in college and 38% of high school graduates in the workforce feel their writing does not meet expectations for quality (Achieve, Inc., 2005). Furthermore, 20% of first year undergraduates take at least one remedial course when they begin their college career (National Center for Education Statistics, 2010). When students enter college underprepared for college writing assignments, they must take remedial courses, adding on to their total course load, and ultimately delaying their graduation date.

In the workplace, writing demands may be even greater for many graduates. Employer expectations underscore the need for effective writing instruction across grade levels and into college so graduates can meet the writing demands of their future employers. It is estimated that American businesses spend as much as $3.1 billion annually on writing remediation (National Commission on Writing, 2004). Improvements in writing instruction will lead to students graduating with more proficient writing skills, and job-seekers will find themselves better able to perform according to their employers’ expectations.

**Students with ASD and Writing**

Students with Autism Spectrum Disorder (ASD) present unique difficulties in the area of writing. In a profile conducted in 2003, students with Asperger Syndrome (AS) demonstrated that they could produce sentences similar in number to their peers, but
sentences generated were brief and not as complex, evidenced by the number of morphemes, t-units, and words (Myles, 2003). Another challenge that students with ASD frequently present is poor fine motor control, which can lead to difficulties in producing legible writing (Falk-Ross, Iverson, & Gilbert, 2004). As a result, students with poor fine motor control tend to experience frustration when writing and may be non-compliant when presented with writing tasks. Students with ASD oftentimes also struggle with abstract thinking, and thought processes required for proficient writing such as imagining pretend situations and using figurative language may be overwhelming (Myles, 2005). In a persuasive piece, this lack of an ability to imagine the audience’s perspective can hinder the writing of a clear counter-argument.

Another troublesome skill for writers with ASD is related to their self-regulation and attention. Children with ASD frequently show impaired self-regulation in a variety of tasks (Jahromi, Bryce, & Swanson, 2013). Self-regulation involves the self-directive processes and self-beliefs that enable learners to transform their mental capabilities into a skill, such as writing (Zimmerman, 2008). Writing requires great self-regulation, especially with more complex assignments, as the child must be able to monitor her progress, assess and make changes as she writes, and self-reinforce writing behaviors without an adult’s assistance in order to successfully complete the assignment. Children with ASD also show lower levels and shorter spans of attention than their typical peers (Bieberich & Morgan, 2004). Writing tends to be an individual activity requiring sustained attention; therefore, decreased attention in students with ASD can result in lower quality writing than that of their peers. Research has suggested that individuals with ASD do appear to have attention deficits associated with executive abilities and
monitoring of new information (Goldstein, Johnson, & Minshew, 2001). Writing requires effective self-regulation processes and demands high levels of attention for extended periods of time.

In 2011, Brown and Klein examined the written compositions of 16 adults with high-functioning autism spectrum disorders (HFASD) and 16 typical control participants. They identified several striking differences between the writing of the participants with HFASD and the typical participants. The participants with HFASD wrote substantially shorter, fragmented narrative texts with weaker global coherence and structure. Overall, participants with HFASD produced lower quality writing due to incongruities in structure, length, and background information. This performance discrepancy was also evidenced in expository writing samples; writers with HFASD were again found to produce lower quality essays mainly due to the lack of focus on main topics and transitions from main ideas. Interestingly, the mechanical scores on the sample essays did not differ significantly, suggesting that producing organized, contiguous content was more problematic for the students with HFASD than attending to the mechanics of writing.

**Self-regulated Strategy Development**

In 2007, Delano examined the effects of a multi-component intervention involving a self-regulated strategy development (SRSD) approach via self-modeling with three students with AS. Students watched themselves video-modeling the self-performance of strategies for increasing total words written (TWW) and the number of persuasive essay elements, and subsequently wrote persuasive essays. Each student
improved in TWW and number of functional writing elements, although maintenance results were variable (Delano, 2007).

Using a SRSD approach to improve lower-performing students’ writing has been validated empirically (Asara & Saddler, 2009, 2010). Asaro and Saddler (2009) examined the effects of using a SRSD approach to improve the narrative writing of a child with AS. The SRSD approach included seven lessons that taught the student a mnemonic writing strategy. The child effectively learned and independently applied the taught strategy, and his holistic quality scores tripled by the end of the study. Although there was a slight decrease in holistic scores on post-treatment probes, the participant continued to use the strategy, suggesting the potential of an SRSD approach to maintain following initial training (Asaro & Saddler, 2009). Similarly, Asaro and Saddler (2010) utilized the SRSD approach with three children with ASD in the second and fourth grades, and they demonstrated the effectiveness of the approach in improving the quality of narrative writing. Furthermore, skill use generalized to different writing tasks, suggesting the potential of an SRSD approach to promote generalization. This finding is promising, as students with ASD frequently experience difficulty with response generalization (Griffin et al., 2006) which is the spread of effect from one antecedent situation to other situations that are similar or related in some way (Vargas, 2009).

**Graphic Organizers**

Graphic organizers are a type of planning tool used with novice writers to help them organize their thoughts and structure their essays correctly. Utilizing a type of graphic organizer, Nussbaum (2007) taught students to write reflective opinion pieces that included counter-arguments. Vee diagrams were graphic organizers designed to
facilitate the planning of arguments and counter-arguments for an opinion piece, and training on using the vee diagrams consisted of group instruction, guided practice, and independent practice. The vee diagram consisted of a large v in which students wrote their question in the middle of the v and then wrote evidence and reasons for both the argument and counter-argument on both sides. At the bottom of the graphic organizer, the student was prompted to ask which argument is stronger and if there is a compromise or creative solution. Treatment effects were not immediate, but the students learned to use the vee diagram to integrate their arguments and counter-arguments (Nussbaum, 2007). Experimental control was evidenced when the removal of the vee diagram resulted in a decline in performance (i.e., true integration did not persist in the absence of the independent variable, suggesting a functional relation between the use of the vee diagram and improved opinion pieces).

In 2012, Unzueta and Barbett examined the effects of using a computer graphic organizer on the persuasive writing skills of four Hispanic students with specific learning disabilities. The participants were instructed on the various elements of persuasive writing and then wrote essays using a word processing program. The participants were then taught to use Inspiration 8.0 to complete a graphic organizer using a modifiable template. With some variation, the use of the computer graphic organizer during post-intervention sessions resulted in an increase in the total number of words written, time spent planning, number of supporting details planned, and percentage of planned supporting details transferred to the composition. Participants also showed an improvement in overall organization of the composition as measured by an analytical rubric (Unzuetta & Barbett, 2012).
In 2011, Brown investigated the effects of graphic organizers and found that they improved student writing as measured by three analytical rubrics. The study’s participants were 21 tenth-grade students who all had IEPs (Individualized Education Program). The students read a short novel with the interventionist, and explicit instruction on the elements of persuasive techniques and the writing process, as well as on how to take notes on a graphic organizer was provided. Students spent three days on the pre-writing process then wrote rough drafts, performed peer editing, revised rough drafts, and wrote final copies. Each student’s writing improved from baseline to intervention as shown by increases in analytical rubric scores (Brown, 2011).

In 2010, Ching and Chee examined the effects of feedback on graphic organizer use and found that feedback improved the relevance of ideas. Thirty-six students taking a first-year engineering class at an Asian university participated in this study. The first stage of the intervention involved surveying students to determine how much experience they had with graphic organizers and modeling the use of various types of graphic organizers. During stage two, students independently used the graphic organizers to complete a writing assignment, and students submitted their assignments and participated in focus discussion groups during the third stage of intervention. Ching and Chee found that the relevance of student ideas increased in all but one sub-process, suggesting that graphic organizers may yield more meaningful writing.

Alvermann (1981) examined the effects of graphic organizers on the recall of information. The participants were 128 tenth-grade students attending a small city high school. The students were shown a partially completed graphic organizer of the passage that they were to read and told to mentally fill in the graphic organizer as they read. The
students then read the passage and recalled the information from the passage. Results indicated that using the graphic organizer increased students’ recall of poorly organized passages. When the students read passages with well-organized ideas, no increase in recall was measured (Alvermann, 1981). These results suggest that students may benefit from using graphic organizers to improve comprehension and retention of what they read.

In 2009, Reynolds and Perin compared the effects of text structure instruction and self-regulated writing strategies on student writing. Participants were 121 students in seventh grade social studies classrooms. Students were instructed on two different strategies: text structure instruction (TSI) and PLAN & WRITE (PWS). In the TSI condition, students were taught to use a sequence frame (i.e., a type of graphic organizer that allows students to order details) to incorporate multiple sources in writing a report on one topic. In the PWS condition, students were taught to use a mnemonics strategy for summarization and to use goal setting to improve their writing performance. Both of the treatment plans were associated with better performance on three measures: main ideas, writing quality, and content knowledge. Students who used the TSI strategy performed better on all three measures as compared to students in the PWS group (Reynolds & Perin, 2009). These results suggest that graphic organizers such as sequence frames should be integral strategies students use when writing expository texts.

In 2008, Hagman and Reid wrote about the effects of an SRSD strategy which included the use of graphic organizers, and they recommended the strategy’s use to improve the writing of students with disabilities. The strategy, POW + WWW, taught students to plan stories and take notes using a graphic organizer for a narrative piece. The procedure also required students to set writing goals on the number of story parts
included in their writing and to graph their results. The graphic organizers were used as support for students to remember the steps of the taught strategy and to guide planning. The authors concluded by describing research that supports the use of SRSD models that include graphic organizers to improve the story writing of students with disabilities (Hagman & Reid, 2008).

Previous research on using graphic organizers with students with ASD has been limited to using graphic organizers to teach content. Zakas, Browder, and Heafner (2013) examined the effects of using a graphic organizer intervention to teach social studies content to students with ASD. Three middle school students ranging in age from 11 to 15 were instructed to use a graphic organizer to answer questions about United States history passages. A graphic organizer was developed to aid students in answering literal and inferential questions. Results indicated a functional relationship between the graphic organizer intervention and each participant’s ability to answer comprehension questions based on grade-level expository text (Zakas et al., 2013).

In a similar study, Knight, Spooner, Browder, Smith, and Wood (2013) examined the effects of teaching science concepts to students with ASD and intellectual disabilities (ID) using systematic instruction and graphic organizers. The participants were three urban middle school students. Systematic instruction that included multiple exemplars of teacher-directed graphic organizer completion was used to teach participants various scientific concepts related to convection. Students filled out graphic organizers with vocabulary words correlating to topics taught. Multiple exemplars were used to ensure that the students were not simply memorizing the placement of the words on the graphic organizer. Each participant was able to reach the mastery criterion for correct responses
on the convection task analysis, and both participants who participated in maintenance sessions maintained high rates of correct responding (Knight et al., 2013). This study adds to the literature supporting graphic organizers as an effective intervention for students with ASD.

Graphic organizers could be used to mitigate difficulties that writers with ASD commonly present, as they can improve planning, organization, and composition coherence. Less skilled writers require rigorous support and scaffolding to organize and chunk information in ways that help them to see and inspect all of the parts that make up the whole (Lee, 2007). Graphic organizers can help writers to make sense of information and stay on a given topic as Ching and Chee found in 2010. They help writers to plan more effectively and, in turn, write more cohesively. Graphic organizers can also help writers with ASD to self-regulate as they compose. The graphic organizer can serve as a prompt, guiding the writer in keeping the text concise and properly organized.

To date, there has been limited research on effective writing instruction for students with ASD, and none on the use of graphic organizers to improve this population’s writing skills. Previous research has shown how graphic organizers can help students with ASD learn from text, but no studies have looked at the effects of graphic organizer instruction on the writing of students with ASD. As writers with ASD struggle to organize their thoughts, they could benefit from the rigorous support and scaffolding graphic organizers offer.

The purpose of the current study was to examine the effects of teaching persuasive writing to middle school students with ASD through graphic organizer training. Research suggests that the use of graphic organizers can improve writing
performance by way of structuring the writing process for less skilled writers; therefore, graphic organizer training was selected for this intervention. Writers with ASD struggle to write cohesively and graphic organizers can help writers to focus their ideas to create better writing. The goal of this study was to extend the research on graphic organizers by examining the effects graphic organizer training on the persuasive writing of students with ASD. The following research questions were posed:

1. What are the effects of teaching middle school students with autism to use graphic organizers on the number of correct writing sequences in their persuasive essays?
2. What are the effects of teaching middle school students with autism to use graphic organizers on the total number of words written in their persuasive essays?
3. What are the effects of teaching middle school students with autism to use graphic organizers on their analytical writing rubric scores on their persuasive essays?
4. What are the students’ opinions of the graphic organizer intervention?
CHAPTER 2

METHOD

This chapter presents the methods that were used in this study. The participants and setting are explained as well as the observer and experimenter identified. In addition, this chapter presents the materials used, definition and measurement of dependent variables, IOA, and procedural reliability, and experimental design and procedures.

Participants and Setting

The participants in this study were three middle school students diagnosed with ASD who attended a private learning center for students with ASD. All participants had an Individualized Education Program (IEP), and writing/language arts goals were included on two of the students’ IEPs. The students were all male and ranged in age from 12 to 14 years old. See Table 1 for participant demographics and relevant IEP objectives. These participants were selected for intervention due to writing deficits (e.g., mechanical and content errors) that had been identified through student work samples. The teacher obtained verbal assent from all students and written permission consent from all parents prior to the start of the study.

All students in the study had a general understanding of sentence and paragraph structure. Tom and Greg often wrote in run-on sentences or fragments for a few sentences of their writing. Oliver had a better grasp of sentence structure and often enjoyed writing sentences with new vocabulary that he had learned in class. The students all were aware
of the general paragraph structure of a topic sentence, details, and concluding sentence, but none of the participants reliably followed this format in their compositions. Spelling was also a concern for all participants in that most of their compositions in class prior to the study contained spelling errors that detracted from the overall quality of the piece. None of the participants had an understanding of how to format a persuasive essay and especially how to write an introduction or conclusion paragraph.

All baseline, intervention, and post-intervention sessions were conducted in the students’ classroom. The last three sessions for all participants and intervention for Oliver were conducted in a new classroom due to the learning center’s relocation. Both classrooms were arranged in a similar manner; each student sat at his own desk, forming a U-shape in the center of the classroom. Each student had ample space on his desk for all relevant materials to enable ease of use. Both classrooms provided an environment that was mainly free from noise and distractions, and both were self-contained settings, with a total of four students and one teacher. All students attended school from 9:00 AM to 3:00 PM and received instruction in the same classroom throughout the day.

The teacher served as interventionist, and the intervention was implemented at her desk in the back corner of the room. During individual intervention sessions, the participant sat next to the teacher. Materials were positioned on the teacher’s desk in front of them so that the participant could see the teacher modeling taught skills. While intervention was conducted with one student, the other students in the classroom worked independently on a variety of teacher-assigned writing tasks. These assignments were related to writing styles previously mastered such as narrative writing by students in
order to ensure independent task completion. All sessions during baseline, intervention, and post-intervention conditions took place between 11:10 and 11:55 AM.

**Experimenter**

The experimenter was a graduate student at The Ohio State University pursuing a master’s degree in special education. The experimenter received a Bachelor of Science in Education: Adolescent/Young Adult: Integrated Language Arts from Bowling Green State University. She has taught at a private learning center for children with ASD for three years instructing reading, language arts, mathematics, social skills, and generative instruction courses. Her students ranged in age from ten to sixteen.

**Observers**

Observers included Mary Sawyer, Melissa Boggs, and Jennifer Cullen. Mary Sawyer, a graduate student in the special education PHD program, provided editing support. Melissa Boggs, a graduate student in the special education master’s program at OSU, provided IOA and procedural fidelity for all sessions required. Jennifer Cullen, a doctoral graduate at OSU, was an observer for procedural fidelity as well.

**Materials**

Materials for this study consisted of a persuasive writing graphic organizer, list of persuasive essay topics, and an analytical rubric. The persuasive writing graphic organizer was developed to guide students through the planning process to write their essays and was printed on two sheets of 8 ½ by 11 inch paper (see Appendix A). The list of topics was presented to students in groups of two for each essay writing session (see appendix B). The analytical rubric was a scale used to judge the quality of students’ writing throughout the study (see Appendix C).
The persuasive writing graphic organizer contained eight spaces for students to do aspects of their planning: a brainstorming box, reason 1, 2, and 3 boxes for planning the main paragraphs of the essay, a counter-argument box, an introduction box, and a conclusion box.

The topics that were presented for each essay were taken from a list of persuasive essay topics that the experimenter had created. The set of questions contained only items that were applicable to the student’s own life such as: “Should students have to wear uniforms?” and “Should students be allowed to have cell phones in middle school?”

The essays were scored with an analytical rubric adapted from Alber-Morgan (2010). The rubric included six categories: introduction, organization, main idea and details, sentences, transitions, and conclusion. Each category was rated on a five point scale, five being the highest quality and one being the lowest quality. The score generated from the rubric could range between six and 30.

**Definition and Measurement of Dependent Variables**

The dependent measures in this study were: total words written (TWW), correct writing sequences (CWS), and analytical rubric scores. Dependent measures were defined and calculated as follows.

**TWW.** TWW was defined as the number of words written in the student’s persuasive essay in forty minutes. The total words written were calculated by counting the number of words on each line of student writing and adding up the total for each line. Hyphenated words were counted as one word. For example, the word daughter-in-law was counted as one single word. Story titles or endings were not counted as part of the
TWW or in the CWS. Words spelled incorrectly were counted as words as well as any nonsense or illegible words.

**CWS.** Correct writing sequences were calculated using the AIMSWEB guidelines (Powell-Smith & Shinn, 2004) with three exceptions. The AIMSWEB guidelines describe a CWS as “two adjacent writing units (words and punctuation) that are correct within the context of what is written” (Powell-Smith & Shinn, 2004). A caret is used to mark each unit of the CWS and a dash is used to mark an incorrect writing sequence (ICWS). There is an implied space at the beginning of the first sentence as seen in the scoring below.

Example: ^The^ ground^ is^ wet^. = 5 CWS

There are 11 rules that govern the scoring of CWS and the first four rules, as presented in the AIMSweb manual, are illustrated below.

Rule 1: Pairs of words need to be spelled correctly.

Example. ^The^kids^are^hungry^. = 5 CWS

^The^kids^are_hangry. = 3 CWS

Rule 2: Words must be capitalized and punctuated correctly with the exception of commas.

Example: ^The^children^laughed.^ _the_joke^was^funny.^

Rule 3: Words must be syntactically correct.

Example: ^I^never_seen^the^pandas^never.

Rule 4: Words must be semantically correct.

Example. ^Hank^went_too_the^forest.^
AIMSweb also includes guidelines for scoring contractions, word with reversed letters, story titles and endings, abbreviations, hyphens, numbers, and unusual characters. These rules were all followed by the scorer.

The three exceptions made by the scorer were in an effort to more accurately reflect the accuracy of grammar and punctuation present in each writing sample. In the first exception, where a comma was needed, but not written, the word sequence was scored as incorrect.

Example. ^To^ begin^ with - - students^ should^ not^ have^ homework^ because ^homework^ will^ take^ away^ from^ other^ activities^ like^ sports^.

Another exception to the AIMSweb scoring guidelines was when compound words were incorrectly split into two words. In this case, each word was considered an error.

Example: –Home - work- is^ a^ valuable^ experience^ for^ students^.

The rationale for scoring each of these words as errors was that although the words could stand alone, they did not accurately reflect the word that the student was attempting to write. In addition, when run-on sentences were scored, an error was noted where the period should have been placed as well as after the first word in what should have been the second sentence.

Example:^For ^example^, ^students^ need^ to^ do^ homework^ to^ improve^ their^ progress^ in^ classes - - they- also^ need^ to^ do^ homework^ so^ that^ they^ can^ become^ more^ responsible^.

**Rubric.** Each essay was also scored according to a teacher-created persuasive writing rubric designed to objectively measure content and mechanical accuracy (see
Appendix C). The rubric consisted of six categories including introduction, organization, main ideas and details, sentences, transitions, and conclusion. Each category was rated on a 5-point scale with each scale increment operationally defined to distinguish along a continuum of few elements (1 point) to all categorical elements addressed (5 points).

**Inter-observer agreement (IOA).**

A second trained observer collected data for at least 33% of baseline and post-intervention sessions. IOA was calculated for all dependent variables during baseline and post-intervention conditions. IOA for correct word sequences was calculated using total agreement by dividing the lower number of CWS by the higher number of CWS and multiplying by 100. IOA for total words written was also calculated by total agreement by dividing the lower number of TWW by the higher number of TWW and multiplying by 100. Total agreement was calculated for rubric scores by dividing the smaller score by the larger score and multiplying by 100.

**Procedural Fidelity**

Baseline, intervention, and post-intervention sessions with all participants were audio recorded in order to assess the integrity with which the teacher implemented the intervention. Procedural fidelity was measured by an independent observer using checklists that task analyzed each step of the baseline and graphic organizer training (i.e., intervention) procedures (see Figures 1, 2, & 3). The observers checked off each step that was accurately followed as they listened to a recording of the session. Procedural Fidelity was calculated by dividing the number of steps completed accurately in the correct sequence by the total number of steps and then multiplied by 100. Procedural fidelity was taken on an average of 33% of all three phases.
Social Validity

Following completion of the study, caregivers and students were asked to complete a questionnaire to rate the extent to which they felt the intervention was effective in improving the student’s writing, as well as their overall satisfaction with the procedures. This questionnaire utilized a Likert scale. The questionnaire and results table can be found in Appendix D.

Experimental Design

A multiple baseline across participants design was used to evaluate the effects of the graphic organizer intervention on student writing. The experimental conditions were baseline and post-intervention. Prior to collecting post-intervention data, the students were provided with three training sessions on using graphic organizers to write persuasive essays.

Procedures

Baseline. During baseline sessions, the teacher presented the participants with two persuasive essay topics (e.g., “Should kids have homework?” or “Should students be required to wear uniforms?”). The participants were then told they had forty minutes to write some planning notes. In the second session of baseline, the teacher gave the planning notes back to the participants and instructed them to do their best to write six paragraphs in forty minutes. The teacher did not provide any further guidance and responded to student questions with, “Do your best.”

When students were not participating in the study, the class continued the current instruction using High Performance Writing (Dodds, 2005). The students participated in a narrative writing unit in which they learned to components of a narrative, studied model
essays, wrote a class narrative, and finally practiced writing a narrative on their own. Students did not participate in this curriculum every day but only on the days in which all students finished their compositions for the study with time left over for more activities.

**Graphic Organizer Training.** Graphic organizer training was conducted with each participant individually, and it began with the teacher and student examining a model persuasive essay. During the first intervention session, the student and teacher read the essay together while the teacher pointed out and defined important persuasive components of the writing (e.g., attention grabber, thesis statement, and counter-argument). The teacher then introduced the graphic organizer and briefly explained each component. She modeled how to write an essay using the graphic organizer to outline the structure. The teacher demonstrated changing phrases into full sentences, and the student helped with providing supporting details and examples.

On the second day of intervention, she demonstrated how to use it to plan and write a persuasive essay. Then, the teacher guided the student through using the graphic organizer to plan and write a persuasive essay. The intervention also included a brief (5-min) mini-lesson during the graphic organizer training on the use of transitions. The mini-lesson was embedded into the guided practice with the graphic organizer use as the last step. Types of transitions were introduced and then planted into the essay according to need. See appendix for materials used. The second day of the intervention began with the teacher presenting two questions to the student and asking him to record the questions in the planning box of the graphic organizer. The student then was prompted to answer each question with a yes or no. For example, if the question was, “Should kids wear uniforms to school?” the student would record the question and then write a yes or no
below the question according to their opinion on the topic. The student would then brainstorm supporting reasons for each question. The student was then instructed to choose the question in which they had listed the strongest or most supporting reasons for the topic of their essay. The teacher then guided the student in completing the reason paragraph boxes with a phrase stating the topic and three supporting phrases. The teacher then guided the student in the formulation of a counter-argument. In the final step of completing the graphic organizer, the teacher helped the student to fill out the introduction and conclusion boxes, as well as to add transitions to the graphic organizer.

The last day of intervention included the teacher guiding the student through the writing of the persuasive essay. Before the student began to write, the teacher reminded him to skip lines, indent each paragraph, include transitions, and to write the essay one paragraph at a time. The teacher gave feedback as the student wrote to ensure that all sentences were complete and that the student was using the graphic organizer to write. The teacher redirected the student to refer to the graphic organizer while he was writing as needed.

The graphic organizer training and transition mini-lesson were conducted across three sessions averaging 40 min each. During intervention sessions, the student continued to earn points in the teacher-student game which had been established as a classroom routine from the beginning of the school year. The teacher used this game and a high rate of specific verbal praise to ensure students remained engaged throughout the intervention sessions.

**Post-intervention.** Post-training sessions were conducted across two days. On the first day of each session, the student was given a blank graphic organizer and told to
write a persuasive essay on one of the two questions listed on the board. The student was given 40 min to plan his essay using the graphic organizer. On the second day, the student was given 40 min to write his persuasive essay using the completed graphic organizer. Data on student writing were collected in a manner identical to that described in the baseline condition.
CHAPTER 3

RESULTS

This chapter presents IOA and procedural fidelity results as well as a summary of results as displayed in Figures 1, 2, and 3.

IOA

IOA was calculated for all dependent variables during baseline, intervention, and post-intervention conditions by a second trained observer for at least 33% of all sessions. IOA was calculated using total agreement for TWW, CWS, and rubric score. IOA on Greg’s dependent variables were as follows: 84% for CWS, 97 for TWW, and 87 for rubric score. IOA on Tom’s dependent variables was 94% for CWS, 97% for TWW, and 94% for rubric score. Lastly, IOA on Oliver’s dependent variables was 90% for CWS, 98% for TWW, and 83% for rubric score. See full results in Table 2.

Procedural Fidelity

Procedural fidelity was measured by an independent observer using checklists that task analyzed each step of the baseline and graphic organizer training (i.e., intervention) procedures. Procedural Fidelity was calculated by dividing the number of steps completed accurately in the correct sequence by the total number of steps and then multiplied by 100. Procedural fidelity was taken on an average of 33% of all three phases and 100% fidelity was found.
Summary of Results

Figures 1, 2, and 3 show TWW, CWS, and rubric scores for all three students across baseline and post-intervention data. For Figure 1, the data patterns for CWS show an increase in level after baseline for each participant, most markedly Greg and Oliver, and some variability in both phases. For Figure 2, the data patterns for TWW show a clear increase in level after baseline for each participant and continue with high variability, especially in Tom’s data. For Figure 3, the data patterns for rubric score show an increase in level after baseline for each participant with very little variability in both phases for all participants.
Figure 1: Correct Word Sequences
Figure 2: Total Words Written
Figure 3: Rubric Score
Tom

Tom displayed a slight downward trend in baseline sessions for TWW ranging from 117 to 141. In post-intervention sessions, Tom’s TWW increased quickly in the first three data points culminating in his highest data point, 221 words. Tom's TWW for the post-intervention sessions ranged from 111 to 221. Tom’s average TWW increased from 121 words in baseline to 139 words in post-intervention sessions with a change of 18 words.

Tom also displayed a downward trend in baseline for CWS with his highest total being 148 and his lowest being 80. Following graphic organizer training, there was a variable trend with an overall increase in CWS from baseline. Tom’s highest total for CWS in the graphic organizer phase was 167 and his lowest was 87. Tom improved his average CWS from 104 in baseline to 121 in post-intervention sessions with a change of 17.

During baseline sessions, there was little variability in Tom’s rubric scores with a range from eight to 11 out of a possible 30. In post-intervention sessions, there was a gradual upward trend in Tom’s rubric scores. The rubric scores ranged from 15 to 22 in post-intervention sessions with the last three sessions each resulting in a score of 20. Tom’s average rubric score increased from 9.75 in baseline to 18 in post-intervention sessions with a change of 8.25.

Greg

During baseline sessions, there was a downward trend in Greg’s TWW, from 165 words to 71 words. During post-intervention sessions, the first three data points presented an upward and steady trend, but there was a slight descent in the last two data points.
Post-intervention sessions ranged from 144 to 208 TWW. Greg’s average TWW increased from 110.7 words in baseline to 179.4 words in post-intervention sessions.

During baseline sessions, there was a variable, downward trend in Greg’s CWS, from a high score of 125 to a low of 63. Similar to the TWW data, there was an initial upward trend in post-intervention sessions, with a peak at 206 CWS, followed by a descent in CWS across the last two data points. Greg’s average CWS increased from 89 words in baseline to 150 words in post-intervention sessions.

During baseline, there was moderate variability in Greg’s rubric scores, ranging from 6 to 10 with no clear trend. In post-intervention sessions, there was an immediate increase from baseline in Greg’s rubric scores, with stable scores ranging from 20 to 23. Greg’s average rubric score increased from 8.42 in baseline to 21.6 in post-intervention sessions.

Oliver

During baseline sessions, there was a steady downward trend with little variability in Oliver’s TWW data, with a peak of 226 words and a low of 124 words. In post-intervention sessions, there was an immediate and significant increase in Oliver’s TWW scores, followed by a slight downward trend. TWW during post-intervention ranged from 183 to 247 words. Oliver’s average TWW increased from 158.82 words in baseline to 216 words written in post-intervention sessions.

During baseline there was also a steady downward trend in CWS with little variability, starting with 212 CWS and descending to 130. In post-intervention sessions, there was an immediate increase in CWS, followed by a slight downward trend. CWS in
post-intervention ranged from 195 to 276. Oliver’s average CWS increased from 157.36 in baseline to 225 written in post-intervention sessions.

During baseline, there was a slight downward trend in Oliver’s rubric scores with moderate variability, ranging from eight to 14. In post-intervention sessions, Oliver’s rubric scores increased and remained stable with little variability, ranging from 23 to 24. Oliver’s average rubric score increased from 11.55 in baseline to 23.67 in post-intervention.

**Social Validity**

Following completion of the study, caregivers and students were asked to complete a questionnaire to rate the extent to which they felt the intervention was effective in improving the student’s writing, as well as their overall satisfaction with the procedures. Included with the questionnaire were a sample essay from a baseline session and another essay from a post-intervention session. Parents were instructed to read both essays and then to answer the questions on the form. This questionnaire utilized a Likert scale. The questionnaire and results table can be found in Appendix D. All parents indicated that they agreed that their child’s essay included interesting sentences, strong statements, and varied sentence structure. All parents also agreed or strongly agreed that their child’s essay included thoughtful transitions in each paragraph and that the paper flowed well. Students responded in a mostly positive manner as well. Two students agreed and one student indicated neutrality when they responded to the statement, “I’m confident that I can persuade someone to agree with my point.” Two students also indicated that they felt the graphic organizer was easy to use and that they enjoyed writing more after learning to use the graphic organizer.
CHAPTER 4
DISCUSSION

Results of the present study demonstrate the effectiveness of the graphic organizer training in improving students’ persuasive writing as measured by TWW, CWS, and rubric scores. Each student’s performance improved in all three categories. The results of this study suggest that graphic organizers are an effective tool for teaching students with ASD to write persuasive essays and that there is a functional relationship between the teaching of graphic organizers and improvement in persuasive writing as measured by TWW, CWS, and rubric scores.

This study extends previous research because it looks at the effects of graphic organizer training with writers with ASD. No previous study has examined the effects of graphic organizer training on persuasive writing and no previous study has used graphic organizers to train students with ASD to produce better writing. The intervention was effective in improving the persuasive writing of all three participants because it taught the participants how to structure their essays using the graphic organizer and showed them how to incorporate transitions into their written work as well as formulating a thesis statement which increased the quality of their writing.

Research Question 1: Effect on CWS
With respect to the first research question, the results indicate that the graphic organizer training package on target writing skills was effective in increasing the number of CWS in persuasive writing essays of middle school students with ASD. All participants improved in the number of CWS per essay. Tom’s average CWS improved from 104 in baseline to 121 in post-intervention sessions, an increase of 17 CWS. Greg’s average CWS improved from 89 words in baseline to 150 words in post-intervention sessions, an increase of 61 CWS. Oliver’s average CWS improved from 157 in baseline to 225 written in post-intervention sessions, an increase of 68 CWS.

All participants displayed an increase in CWS; however, Tom showed the smallest increase while Oliver showed the greatest increase in CWS. CWS was made more difficult to score because of idiosyncrasies in handwriting and an inability on the behalf of the observers to decipher all words written. Tom and Greg’s handwriting proved to be the toughest to assess in regards to CWS since often words were written closely together. Also Tom, Greg, and Oliver also struggled with spelling which was not addressed in the intervention and greatly affected their CWS. Because of this, CWS was a clear indicator that more writing was being produced, but perhaps not of higher quality work.

**Research Question 2: Effect on TWW**

With respect to the second research question, graphic organizer training and direct instruction on target writing skills was effective in increasing the TWW in persuasive writing essays of middle school students with ASD. All participants achieved clear increases in TWW. Tom’s average total words written increased from 121 words in baseline to 139 words in post-intervention sessions, an increase of 18 words on average.
Greg’s average total words written increased from 111 words in baseline to 179 words in post-intervention sessions, a more significant increase of 68.7 words on average. Oliver’s average total words written increased from 159 words in baseline to 216 words written in post-intervention session, an increase of 58 words on average. Although all participants improved performance on the TWW measure, there was a slight downward trend in later data points across participants.

In regards to change in TWW, each participant increased their writing output and the graphic organizer helped them to do this. Because the graphic organizer gives the student a framework with which to structure their essay, they are able to put more time and energy into formulating ideas and consequently able to produce more writing. Although TWW is not an indicator of writing quality, the participants’ essays did increase in quality as seen in the rubric score as their TWW increased. The slight downward trend in later data points, I believe, indicates fatigue of the participants and a boredom with the topics given since all topics were chosen since they were relevant to a student’s life and were similar in theme.

The findings for TWW, add to the current literature about graphic organizer instruction because previous studies have not worked with increasing TWW with students with autism. The findings here are similar to the findings in studies teaching graphic organizers to other populations (Delano, 2007). Unzueta and Barbett (2007) also increased TWW with a population with disabilities, but focused on individuals with learning disabilities. This studies shows that graphic organizer training can increase TWW in writing samples of students with autism.
Research Question 3: Effect on Rubric Scores

With respect to the third research question posed in this study, graphic organizer training and direct instruction on target writing skills was effective in improving the quality of writing in persuasive writing essays of middle school students with ASD, as measured by an analytical writing rubric. All participants improved their writing as evidenced by increases in the total rubric scores achieved on their post-intervention essays. Tom’s average rubric score increased from 9.75 in baseline to 18 in post-intervention sessions, signifying higher-quality writing. Greg’s average rubric score increased from 8.42 in baseline to 21.6 in post-intervention sessions, indicating an improved quality of writing. Oliver’s average rubric score increased from 11.55 in baseline to 23.67 in post-intervention sessions, demonstrating a higher quality of writing.

In the introduction category, all students showed a significant improvement. All three students were not writing clear introductions during baseline and were not aware of the concept of a thesis statement. After the intervention, all participants consistently included an introduction with an attention grabber and a thesis statement. All three students struggled, however, to write the transition to thesis statement sentence. This was only modeled and briefly practiced in the intervention. Tom also struggled on some essays to include his reasons in his thesis statement.

In the organization category, all students increased their score because each student included a counter-argument in each essay after baseline. No students, however consistently scored a four or above because the counter-arguments they provided were unclear and often lacked refuting evidence. This skill should have been practice more in depth so that students could have written clearer counter-arguments.
In the main idea and details category, students generally increased their score, but to varying success. Tom and Greg often failed to give three or more supporting details for each main idea so they scored lower in this category over all. Oliver generally included more details and frequently included examples to support his main ideas resulting in a higher score in this category overall. This skill, of supporting main idea with relevant details, should have been practice further to ensure that once writing independently students would be able to formulate clear details for all main ideas.

One category that did not show significant improvement was sentences, but there was no instruction on complex/compound sentences in the intervention and only modeling was used to show what these sentences looked like. Some improvement did occur in this category with all three participants as a direct result of the inclusion of transitions which often resulted in a complex sentence which earned a higher score on the rubric.

The transition category was the category that showed the most improvement for all participants. Oliver, Tom, and Greg all routinely included transitions although often did not earn the top score (a five) because their transitions were not judged to be thoughtful since often they were the same transitions that the student had used in most of his previous essays. However, all participants included transitions at the beginning of each paragraph except for the introduction and Greg included transitions between sentences routinely. To strengthen this result, there should be more instruction on how to choose transitions and more exposure to the different types of transitions.

In the conclusion category, results largely mimicked the introduction category. Each student improved in this category going from having no conclusion in baseline to
achieving a three or four for the conclusion category during the graphic organizer phase.

Tom sometimes struggles to write the final sentence of the conclusion which was a strong statement of the author’s viewpoint. This last sentence was only modeled and practiced once, so more guiding and student practice may have improved the writing of this final statement.

Rubric scores were more significantly improved and had more stable trends than that of the TWW and CWS measures. The greater improvement makes sense since the behaviors that were measured in the rubric score were directly taught in the intervention. CWS and TWW were generalization measures that gave another picture of the students’ writing. Since the students were not instructed in grammar or spelling, the improvement in CWS was not as significant. CWS did improve, but was probably only a result of students writing more. TWW did improve, but was less stable. Again, students were not directed to write more, increase their TWW, but did as a result of the intervention.

The increase in rubric score aligns with other studies in that a significant increase was shown as well as a stable trend. These results are similar to the study conducted with students with IEPs in which students were taught using a graphic organizer and results were examined using three analytical rubrics (Brown, 2011). The results also align with Ching and Chee’s study (2010) which found that feedback on graphic organizer use could improve the relevancy of ideas. The rubric score incorporates relevancy of ideas in the main idea and details category. Again, the results add to the literature in that they use a graphic organizer package to increase writing quality of students with ASD which has not been previously studied.
Research Question 4: Students’ Opinions

Student opinion of the graphic organizer intervention was positive in regards to some aspects and negative in regards to other aspects of the study. When asked to respond on a Likert scale to the statement, “I’m confident that I can persuade someone to agree with my point,” two students agreed while one indicated neutrality. Two students also indicated that they felt the graphic organizer was easy to use and that they enjoyed writing more after learning to use the graphic organizer. One student strongly agreed, one agreed, and one was neutral in response to the statement “I think the graphic organizer was easy to use.” Each student initially verbalized their displeasure over using the graphic organizer, but when prompted, they continued use of the graphic organizer and negative comments abated as the intervention continued. One student reported agreeing that they would use a graphic organizer in the future for persuasive essays while one student was neutral and one disagreed. Two students agreed that they enjoyed writing more after learning to use the graphic organizer and one student disagreed. One student strongly agreed that they learned to be a better writer using the graphic organizer while one student reported being neutral on the topic and one student disagreed. While student opinion varied on different aspects of the intervention, all students continued to participate fully throughout the study and it was noted by the teacher that frustration during writing activities with the graphic organizer was less than with writing activities without this support.

Limitations and Future Research

Despite successful outcomes of the current study, there are several limitations to consider. First, the IOA on the CWS and rubric measures was lower than that of TWW.
Even though the IOA on CWS and rubric measure was low, IOA was still fairly high ranging from the low eighties to the high nineties percentile. One difficulty that may have resulted in the lower levels of agreement was that each observer had to interpret the participants’ handwriting in order to calculate CWS. Each participant had handwriting idiosyncrasies such as inappropriate use of capitalization, irregular spacing between words, faint writing (i.e., insufficient pressure applied with the pencil to the paper), and general illegibility. Each observer was left to make judgments about what the participant had written; thus, these unique student handwriting features may have contributed to differing scores on the CWS measure. Teachers implementing this procedure in the future may consider having students utilize computer software as the writing mechanism to ensure greater consistency in student writing. Also the rubric score IOA may have been impacted by the sometimes vague descriptions used for each category. Words like: clearly, vaguely, and persuasively may be replaced with more quantifiable and behavioral language. In future research, the rubric should be developed to use the clearest language possible with measurable categories as well as a provision written into the procedures that if IOA dropped below a certain percentage, that observers would be retrained on measures.

Another limitation to be considered is that this study could have addressed maintenance or generalization of the improved writing skills more fully. Each session after the intervention was a maintenance probe since there was no further instruction given to the students. In future research, maintenance probes could be extended for more sessions to see if students retained the improvement in writing skills. Generalization was measured in the TWW and CWS measures since these measures were not directly
instructed to in the study. The students were not trained on mechanical accuracy or
instructed to write more. As for generalization to other types of writing, anecdotally, the
teacher did observe that the participants’ ability to write thesis statements improved and
they included transitions in other types of writing, but no formal generalization, in
regards to other types of writing, were collected. The students were also observed to write
more cohesive paragraphs with strong main ideas and supporting details in a research
paper completed after the study, informally suggesting skill maintenance and
generalization. Finally, and also anecdotally, students were able to write more
independently and no longer became frustrated when beginning new paragraphs and
essays as they had prior to the intervention. Future research should include formal
measures of skill maintenance and examine the generalization of taught skills to other
types of writing as well as the ability of students to write persuasive essays without the
use of the graphic organizer.

Another limitation was the fact that the participants were all middle school
students with ASD so it is not possible to generalize the results of this research beyond
this particular population. Future research should examine the effects of this intervention
with different populations as well as with different age groups.

In this study, only one type of writing was examined with the graphic organizer
intervention. This study only examined persuasive writing because it was determined to
be an area of deficit for the students. Also argument writing aligns with the common core
standards for eighth grade students in Ohio (National Governors Association Center for
Best Practices, Council of Chief State School Officers, 2010). Examining more than one
type of writing would not have been feasible with the time frame that was available to the
teacher. In the future, studies should focus on using graphic organizers to improve other types of student writing such as narrative, expository, and summary writing to further strengthen graphic organizers as a valid intervention for students.

The intervention was also implemented individually which may not be feasible for most educators. The intervention was implemented individually in this study to accommodate the multiple-baseline across participants design that helped to establish the functional relationship between the intervention and the improvement in student writing. Future research should examine the effects of implementing the intervention to small and larger groups of students. This would help to improve the accessibility of the intervention for all educators.

Another limitation was also the subjectivity of the rubric. Rubrics are inherently more subjective than other more quantitative measures, but the rubric that was used was designed to be as objective as possible. The categories often included a number to help to establish criteria such as having two or more complex/compound sentences or transitions present at the beginning of three or more paragraphs. These categories helped to ensure that IOA would be high and that there would be less “gray area” in scoring essays. Also in order to make the rubric sensitive to change in writing quality, each category had five different possible ratings.

The measurement, TWW, could also be seen as a limitation of the study’s results because it does not indicate any information about the quality of writing. TWW was considered to be a valid measurement here because all participants struggled to write longer essays and typically produced very short writing pieces. Given that a goal of the study was to improve the quality of their writing, necessarily there needed to be an
increase in TWW to accommodate more sophisticated composition. TWW was looked at as only one single measurement of the change in student’s writing and CWS and rubric score helped to shed light on more specific improvements in writing samples.

The measurement of CWS was also used to measure results of the graphic organizer intervention. While CWS is a valid measurement of quality of writing as related to mechanics, it is not a valid measurement of quality of content. The participants in the study also struggled to write grammatically correct sentences so CWS was viewed as being a valid measurement because it would capture the changes in grammar that the teacher hoped to see after the intervention.

In assessing the essays, three measurements were used: TWW, CWS, and analytical rubric score in order to capture the true change in written composition that occurred after the intervention. TWW helped to capture the change in output of words which was important since all the participants struggled to write longer essays while CWS was used to capture changes in the mechanical accuracy of the students’ writing which was also an area of deficit for all participants. The analytical rubric score helped to capture the change in overall composition: essay structure, writing of thesis statements, inclusion of counter-arguments, and transitions to measure how well the students had learned to write a persuasive essay according to the predetermined criteria set by the rubric. All three measurements together provided a full picture of improvement in student writing in regards to writing output, mechanical accuracy, and essay composition components.

Another limitation to consider is the two day design for each writing sample. Students were given forty minutes on day one to plan and then forty minutes on day two
to plan. It is unclear if the day gap between planning and writing helped students to further organize their thoughts or if it hindered them by helping them to forget their original ideas on the subject. In future research, manipulation of the design should be considered to examine effects on writing quality. Another element of the design to be examined is that the participants were given forty minutes both to plan and then to write on the second day. The students in the study never used more than 15 minutes to plan and rarely used the full forty minutes to write. In future research, a shorter time allotment for planning and perhaps for writing might help to make the study more efficiently implemented and make it possible to get more data points in a shorter amount of time.

Another limitation was that the multiple-baseline across participants design fatigued students and did not allow for fading or reversal of the graphic organizer. While students still increased their averages from baseline phase to post-intervention, the downward trend in CWS and TWW during post-intervention was troubling since it indicated a decline in interest and motivation. Future researchers should consider a different design to cut down on the fatigue of the students such as a multiple probe design so that students do not lose interest in participating. The multiple-baseline design also did not allow researchers to examine the effect of the graphic organizer by fading its use in post-intervention or by comparing effects of writing with and without it. A reversal design could have been used to examine graphic organizer and no graphic organizer conditions. Another approach could be taken to where the graphic organizer was systematically faded and each new element that was taken away could have been a phase of the study. This would allow researchers to see how the graphic organizer supported or did not directly support the improved writing.
A final limitation of the study is the inability to determine what components of the graphic organizer training package was effective. Due to the design of the study and the lack of manipulation of the graphic organizer, it is impossible to tell if the actual design of the graphic organizer, the boxes with space in them to write and the particular configuration and size of the spaces, was the reason why writing improved, if the instruction was the true cause of the behavior change or if the combination of both the graphic organizer and intervention is most effective. Future research should implement instruction alone and then have a comparison with instruction and a graphic organizer or even a comparison between two different graphic organizers. This comparison of conditions could help determine what parts of the intervention are effective or most effective in improving writing performance.

**Implications for Practitioners**

This study showed that graphic organizers and explicit instruction in persuasive composition can be an effective intervention in which to teach persuasive writing. Teachers should use the graphic organizer, in the future, as a tool for students who typically write less focused compositions, have trouble adhering to a single theme, or have trouble getting started writing because the organizer prompts the writer to adhere to a structure that will help them to be more successful in their composition. This can be especially helpful with writers with ASD since many display some of these characteristics (Goldstein, Johnson, & Minshew, 2011). The graphic organizer is a tool, but not a substitute for instruction in composing which should involve a demonstration of writing a persuasive essay, a guided practice phase in which the teacher works with a student or students and together they compose an essay, and then a test phase that
includes specific feedback for each student on their performance for a more effective intervention. Also, teachers should consider a fading procedure with the graphic organizer so that students do not become dependent on the tool for writing in the persuasive format. Once mastery is achieved, which could be determined by rubric score achievement, teachers could begin to fade elements of the graphic organizer until the student is planning their essay on a blank sheet of paper. There are also available many different types of graphic organizers for writing that range in genre from narrative to expository writing. These graphic organizers could be used with a similar procedure to teach other types of writing to students.

Conclusion

In conclusion, many children struggle to become proficient writers and in no population is this more pronounced than in children with disabilities such as ASD. Graphic organizers have been demonstrated to be an effective tool for reading comprehension and for improvement in certain types of writing. This study demonstrates that children with ASD can be successful with written expression with the implementation of a graphic organizer intervention. The findings from this study suggest that using a graphic organizer in conjunction with direct instruction on persuasive writing can improve the writing quality of students with ASD. The participants in this study showed increases in TWW, CWS, and analytical rubric scores as a result of the intervention. Teachers can take this intervention and customize writing instruction for the individual learning needs of their students. They can also implement this intervention in small group or whole class settings so that more students can benefit from the procedures.
References


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doi:10.1080/09523987.2010.492678


(This table was prepared July 2010.)


Teaching social studies content to students with autism using a graphic organizer intervention. *Research in Autism Spectrum Disorders, 7*(9), 1075-1086.

Appendix A

Tables

Table 1.

*Participant Demographics*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age</th>
<th>Grade</th>
<th>Race</th>
<th>WIAT: Essay Composition Grade Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom</td>
<td>14</td>
<td>8</td>
<td>Caucasian</td>
<td>5.7</td>
</tr>
<tr>
<td>Oliver</td>
<td>12</td>
<td>7</td>
<td>Caucasian</td>
<td>4.7</td>
</tr>
<tr>
<td>Greg</td>
<td>13</td>
<td>8</td>
<td>Multi-Race</td>
<td>5.2</td>
</tr>
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</table>
Table 2.

*Relevant Participant IEP Objectives*

<table>
<thead>
<tr>
<th>Participant</th>
<th>IEP Objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom</td>
<td>2.1 Given a writing assignment, Tom will use a resource (dictionary, class text) to spell words correctly with no more than one misspelled word, 90% of charted trials.</td>
</tr>
<tr>
<td></td>
<td>2.2 Given a writing assignment, Tom will independently proofread his writing resulting in no more than one error, 90% of charted trials.</td>
</tr>
<tr>
<td></td>
<td>2.3 Given a writing assignment, Tom will use a variety of sentence structures in his writing (at least one compound word or complex sentence per paragraph) 90% of charted trials.</td>
</tr>
<tr>
<td></td>
<td>2.4 Given a writing assignment, Tom will write paragraphs that begin with a topic sentence, end with a concluding sentence and include 3 or more detail sentences, 90% of charted trials.</td>
</tr>
<tr>
<td>Greg</td>
<td>1.1 After writing a response or passage, Greg will correct spelling errors using available resources with two or fewer errors remaining, in 4 out of 5 attempts by May 2013.</td>
</tr>
<tr>
<td></td>
<td>1.2 Given a writing topic, Greg will write a paragraph without repeating any sentences, in 4 out of 5 attempts by May 2013.</td>
</tr>
<tr>
<td></td>
<td>1.3 Given a writing topic, Greg will write two paragraphs without repeating any ideas or sentences, in 4 out of 5 attempts by May 2013</td>
</tr>
</tbody>
</table>
Table 3.

*IOA on All Dependent Variables for Each Participant*

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Average IOA</th>
<th>Baseline (BL)</th>
<th>Intervention (Post)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWS</td>
<td>84.38%</td>
<td>90.89%</td>
<td>77.86%</td>
</tr>
<tr>
<td>TWW</td>
<td>96.56%</td>
<td>94.33%</td>
<td>98.8%</td>
</tr>
<tr>
<td>Rubric</td>
<td>87.73%</td>
<td>90%</td>
<td>85.45%</td>
</tr>
<tr>
<td><strong>Total IOA: 5/13 sessions = 38.4 %</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Average IOA</th>
<th>Baseline (BL)</th>
<th>Intervention (Post)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWS</td>
<td>93.66%</td>
<td>93.2%</td>
<td>94.11%</td>
</tr>
<tr>
<td>TWW</td>
<td>97.1</td>
<td>97.63</td>
<td>96.56</td>
</tr>
<tr>
<td>Rubric</td>
<td>94.11</td>
<td>95.45</td>
<td>92.77</td>
</tr>
<tr>
<td><strong>Total IOA: 5/14 sessions = 35.71 %</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Average IOA</th>
<th>Baseline (BL)</th>
<th>Intervention (Post)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWS</td>
<td>89.93</td>
<td>83.32</td>
<td>96.53</td>
</tr>
<tr>
<td>TWW</td>
<td>98.61</td>
<td>99.41</td>
<td>97.8</td>
</tr>
<tr>
<td>Rubric</td>
<td>83</td>
<td>74.33</td>
<td>91.67</td>
</tr>
<tr>
<td><strong>Total IOA: 5/14 sessions = 35.71 %</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.

*Social Validity Results: Student Questionnaire*

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think using the graphic organizer was easy to use.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learned to be a better writer using the graphic organizer.</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>I’m confident that I can persuade someone to agree with my point</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I know how to provide a transition from one idea to another</td>
<td>2</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>I can provide a counter-argument to strengthen my essay</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think the graphic organizer helped me to write a conclusion</td>
<td>2</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>I will use a graphic organizer in the future for other persuasive essays.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I enjoy writing more after learning to use the graphic organizer</td>
<td>2</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>I can use graphic organizers to plan other types of writing.</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5

*Social Validity Results: Parent Questionnaire*

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The introduction caught my attention and stated the main idea</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The essay presents the argument clearly and provides a counter-argument.</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are clear main ideas with supporting details.</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The essay includes interesting sentences, strong statements, and varied sentence structure.</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The essay includes thoughtful transitions in each paragraph and the paper flows well.</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Graphic Organizer

Persuasive Essay Planning

<table>
<thead>
<tr>
<th>Reason 1: Transition</th>
<th>Reason 2: Transition</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______________</td>
<td>_______________</td>
</tr>
<tr>
<td>Evidence/Supporting</td>
<td>Evidence/Supporting</td>
</tr>
<tr>
<td>Examples:</td>
<td>Examples:</td>
</tr>
<tr>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reason 3: Transition</th>
<th>Counter-argument:</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______________</td>
<td></td>
</tr>
<tr>
<td>Evidence/Supporting</td>
<td></td>
</tr>
<tr>
<td>Examples:</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td></td>
</tr>
</tbody>
</table>

State opposite opinion:

Transition _______________

Reason to support opposing stance:
# Introduction

**Attention Grabbing Statement:**

_______________________________________________________________________________

_______________________________________________________________________________

**Transition to Thesis Statement:**

_______________________________________________________________________________

_______________________________________________________________________________

**Thesis statement with three supporting details:**

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

---

# Reason 1 Paragraph

# Reason 2 Paragraph

# Reason 3 Paragraph

# Counter-argument Paragraph

---

# Conclusion:

**Restate Opinion: Transition**

_______________________________________________________________________________

_______________________________________________________________________________

**Summarize three reasons:**

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

**Closing statement:**

_______________________________________________________________________________

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Appendix C

List of Persuasive Essay Topics

1. Should students be allowed to have cellphones in middle school? Should students have to wear uniforms?
2. Should the voting age be lowered to thirteen? Should students be paid for having good grades?
3. Should the driving age be raised to twenty-one? Should students’ textbooks be replaced by laptops?
4. Should schools serve french-fries and fried potato products to students at lunch? Should girls be allowed to play on boys sports teams?
5. Should teens be able to buy violent video games? Should students be able to listen to mp3 players while working independently on schoolwork?
6. Is it appropriate for students and teachers to be friends on Facebook? Should teens over 13 years of age be allowed into R rated movies?
7. Should community service be a requirement for graduation? Should students be allowed to drop out of school before they turn 18?
8. Should all children 16 and under have a curfew of 10? Should homework be banned for all students?
9. Should children younger than thirteen be able to watch MTV or music videos? Should standardized testing be banned?
10. Should students be required to learn Spanish? Should art be a required class for all students?
11. Should gym be a required class for all students? Should the school day start later in the morning and end later in the afternoon?
12. Should students be able to go to college for free if they have good grades? Should high school students be able to leave school for lunch?
13. Should students have a different teacher for each class? Should students go on field trips every week?
14. Should students be able to earn rewards at school for good behavior? Should students be able to choose what high school they go to within their city?
15. Should teenagers be able to buy lotto tickets? Should schools be required to teach evolution?
16. Should teenagers be required to learn a trade in high school? Should school be year round?
## Appendix D

### Analytical Rubric

<table>
<thead>
<tr>
<th>Skill</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>First paragraph has an effective attention grabber, strong transition to thesis statement, clear thesis statement that presents main ideas that will be discussed in the essay.</td>
<td>First paragraph has an effective attention grabber, a clear attempt at a transition to thesis statement, thesis statement that presents main ideas that will be discussed in the essay.</td>
<td>First paragraph has a somewhat effective attention grabber, an attempt at a transition to thesis statement, thesis statement that presents some of the main ideas that will be discussed in the essay.</td>
<td>An attention grabber is attempted but lacks clarity. No attempt is made at a transition to thesis statement, thesis statement presents some of the ideas that will be presented in the essay.</td>
<td>No attention grabber, incoherent or non-existent thesis statement, and no mention of main ideas that will be presented.</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>Essay is presented in logical order with the presentation of arguments in order of most to least important including a clear counter-argument with refuting evidence.</td>
<td>Essay presents each argument clearly, but not in the correct sequence. The essay also includes an attempt at a counter-argument, but without clear refuting evidence.</td>
<td>Essay presents each argument with some clarity, but not in the correct sequence. The essay includes an attempt at a counter-argument, but is not clearly stated and lacks refuting evidence.</td>
<td>Essay lacks overall organization. Arguments are presented randomly. The essay includes some evidence of a counter-argument.</td>
<td>No organization detected, arguments are unclear, reads like free association. The essay does not include a counter-argument.</td>
</tr>
<tr>
<td><strong>Main ideas and details</strong></td>
<td>Main ideas are clearly stated and supported by at least three supporting details that are either factual or logical.</td>
<td>Main ideas are stated and supported by three supporting details. Some details may not be factual, logical, or supportive of the main idea.</td>
<td>Main ideas are stated and supported by less than three supporting details. Some details may not be factual or supportive of the main idea.</td>
<td>Main ideas are stated, but no supporting details are provided.</td>
<td>Main ideas are unclear.</td>
</tr>
<tr>
<td><strong>Sentences</strong></td>
<td>Interesting sentences, strong statements, and advanced sentence variation.</td>
<td>Sentences are complete, and show some variation of structure. There is at least two complex or compound</td>
<td>Most sentences are complete and there is at least one example of a complex or compound</td>
<td>Sentences show little or no variation. Some sentences are incomplete or incoherent.</td>
<td>Most sentences are incomplete or incoherent.</td>
</tr>
<tr>
<td>Transitions</td>
<td>A variety of thoughtful transitions are used. There is a transition to begin each paragraph after the introduction. The transitions clearly show how ideas are connected.</td>
<td>Transitions show how ideas are connected, but there is little variety.</td>
<td>Transitions are present at the beginning of 3 or fewer paragraphs. Most transitions are effective, but some connections between ideas are unclear.</td>
<td>Some transitions are effective, but most connections between ideas are unclear.</td>
<td>The transitions between ideas are unclear OR nonexistent.</td>
</tr>
<tr>
<td>Conclusion</td>
<td>Thesis statement is restated and reasons are clearly and persuasively outlined. The conclusion culminates in a strong clear statement of the author’s viewpoint.</td>
<td>Thesis statement is restated and reasons are outlined. The conclusion culminates in a statement of the author’s viewpoint.</td>
<td>The opinion is restated and reasons are mentioned, but lack clarity.</td>
<td>A conclusion is attempted, but the thesis statement and reasons are unclear or missing.</td>
<td>No conclusion is provided.</td>
</tr>
</tbody>
</table>
## Appendix E

### Procedural Fidelity for Baseline Phase

**Day One:**

<table>
<thead>
<tr>
<th>Step</th>
<th>C (Correct)</th>
<th>I (incorrect)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Experimenter says &quot;Tomorrow you will be writing a paper. Today I would like for you to pick one of these topics and write some planning notes. You have 40 minutes, and when you're finished, please bring your notes to me.&quot;.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Experimenter gives choice of two topics.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Experimenter reminds students to write on every other line.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Experimenter records time student(s) began writing.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Experimenter gives 5 minute warning before the 40 minutes is up.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>When they submit their planning notes, Experimenter says, &quot;Thank you for turning this in to me. I will give you back your graphic organizer tomorrow when it is time to write your paper.&quot;</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>If applicable, when student has sat for five minutes without touching their paper or pencil, the experimenter reminds them when they are finished to turn in their paper and planning notes, but the experimenter does this no more than one time per writing session.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Experimenter records time student stopped writing.</td>
<td></td>
</tr>
</tbody>
</table>
Day Two:

<table>
<thead>
<tr>
<th>Step</th>
<th>C (Correct)</th>
<th>I (incorrect)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Experimenter says &quot;Here are your planning notes from yesterday&quot;</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Experimenter passes out planning notes to each student.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Experimenter says “Do your best to write six paragraphs. You have 40 minutes, and when you're finished, please turn your paper and planning notes in to me.&quot;</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Experimenter reminds students to write on every other line.</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Experimenter records time students began writing.</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Experimenter gives 5 minute warning before the 40 minutes is up.</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>If applicable, when student has sat for five minutes without touching their paper or pencil, the experimenter reminds them when they are finished to turn in their paper and planning notes, but the experimenter does this no more than one time per writing session.</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>When they submit their paper, experimenter says, &quot;Thank you for turning this in to me.&quot;</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Experimenter records time student stopped writing.</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix F

### Procedural Fidelity for Intervention

<table>
<thead>
<tr>
<th>Procedural Steps:</th>
<th>Correct (C) or Incorrect (I)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teacher introduces the graphic organizer.</td>
<td></td>
</tr>
<tr>
<td>2. Teacher explains what goes in each box on the graphic organizer.</td>
<td></td>
</tr>
<tr>
<td>3. Teacher introduces topics and models how to brainstorm and choose topic.</td>
<td></td>
</tr>
<tr>
<td>4. Teacher explains and models how to number reasons from weakest to strongest.</td>
<td></td>
</tr>
<tr>
<td>5. Teacher explains and models how to put reasons in each reason box and to develop evidence and supporting examples.</td>
<td></td>
</tr>
<tr>
<td>6. Teacher explains the definition and purpose of a counter-argument and models how to develop a counter argument.</td>
<td></td>
</tr>
<tr>
<td>7. The teacher explains elements of an introduction and models planning.</td>
<td></td>
</tr>
<tr>
<td>8. The teacher explains the purpose of the box directly below the introduction box.</td>
<td></td>
</tr>
<tr>
<td>9. The teacher explains elements of a conclusion and models planning.</td>
<td></td>
</tr>
<tr>
<td>10. The teacher outlines purpose of transitions, different types, and examples.</td>
<td></td>
</tr>
<tr>
<td>11. The teacher models how to write transitions in graphic organizer.</td>
<td></td>
</tr>
<tr>
<td>12. The teacher models how to write the</td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>13.</td>
<td>The teacher leads the student through writing reason 2 and 3 paragraphs.</td>
</tr>
<tr>
<td>14.</td>
<td>The teacher models how to write the counter argument.</td>
</tr>
<tr>
<td>15.</td>
<td>The teacher leads student in writing the conclusion.</td>
</tr>
<tr>
<td>16.</td>
<td>The teacher leads the student through brainstorming and choosing from two new topics.</td>
</tr>
<tr>
<td>17.</td>
<td>The teacher leads the student in completing reason paragraph boxes.</td>
</tr>
<tr>
<td>18.</td>
<td>The teacher leads the student in planning the counter-argument.</td>
</tr>
<tr>
<td>19.</td>
<td>The teacher leads the student in planning the introduction and conclusion.</td>
</tr>
<tr>
<td>20.</td>
<td>The teacher leads the student in the addition transitions to graphic organizer.</td>
</tr>
<tr>
<td>21.</td>
<td>The teacher reminds students of writing conventions such as skipping lines, indenting each paragraph and including transitions and instructs them to write their essay one paragraph at a time.</td>
</tr>
<tr>
<td>22.</td>
<td>The teacher guides student through writing each paragraph and gives feedback after student completes each paragraph.</td>
</tr>
</tbody>
</table>
Appendix G

Procedural Fidelity for Post-Intervention Phase

Day One:

<table>
<thead>
<tr>
<th>Step</th>
<th>C (Correct)</th>
<th>I (incorrect)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Experimenter says &quot;Tomorrow you will be writing a paper. Today I would like for you to pick one of these topics and plan your essay using this graphic organizer. You have 40 minutes, and when you're finished, please bring your notes to me.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Experimenter hands out blank graphic organizers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Experimenter gives choice of two topics.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Experimenter records time student(s) began writing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Experimenter gives 5 minute warning before the 40 minutes is up.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. When they submit their planning notes, Experimenter says, &quot;Thank you for turning this in to me. I will give you back your graphic organizer tomorrow when it is time to write your paper.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Experimenter records time student stopped writing.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Day Two

<table>
<thead>
<tr>
<th>Step</th>
<th>C (Correct)</th>
<th>I (incorrect)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Experimenter says &quot;Here is your graphic organizer from yesterday&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Experimenter passes out graphic organizer to each student.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Experimenter says “Do your best to write six paragraphs. You have 40 minutes, and when you're finished, please turn your paper and planning notes in to me.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Experimenter reminds students to write on every other line.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Experimenter records time students began writing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Experimenter gives 5 minute warning before the 40 minutes is up.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. When they submit their paper, experimenter says, &quot;Thank you for turning this in to me.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Experimenter records time student stopped writing.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix H

Social Validity Form for Parents

Dear parents:

In a study conducted earlier this year, your child was instructed on how to write persuasive essays. Good persuasive writing includes the following elements:

**Attention grabber:** a quote, anecdote, or question to grab the reader’s attention

**Transitions:** words or phrases that signal to the audience how topics are related or that the author is introducing a new topic, or concluding their essay. Examples: First, To begin with, In conclusion

**Counter-argument:** when an author predicts a rebuttal from an opposing viewpoint and refutes that argument with clear evidence

It would be greatly appreciated if you would take the time to read your child’s writing sample, stapled to this survey, and answer the following questions by filling in one circle for each question asked depending on the degree to which you agree or disagree with the statement.

Thank you!

Anne Bishop

1. The introduction caught my attention and stated the main idea.

   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

2. The essay presents the argument clearly and provides a counter-argument.

   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

3. There are clear main ideas with supporting details.

   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

4. The essay includes interesting sentences, strong statements, and varied sentence structure.

   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

5. The essay includes thoughtful transitions in each paragraph and the paper flows well.

   Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
Appendix I

Social Validity Form for Students

Directions:

You participated in a study that helped to teach you to write persuasive essays earlier this school year. Today you will share what you thought about your experience and how your writing has changed. For each question fill in the bubble that expresses to the degree that you agree or disagree with the statement.

1. I think using the graphic organizer was easy to use.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

2. I learned to be a better writer using the graphic organizer.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

3. I’m confident that I can persuade someone to agree with my point.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

4. I know how to provide a transition from one idea to another.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

5. I can provide a counter-argument to strengthen my essay.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

6. I think the graphic organizer helped me write a conclusion.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

7. I will use a graphic organizers in the future for other persuasive essays.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

8. I enjoy writing more after learning to use the graphic organizer.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

9. I can use graphic organizers to plan other types of writing.
   - Strongly Agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
## Appendix J

### Transitions

<table>
<thead>
<tr>
<th>Show similarities among ideas:</th>
<th>Show contradictions or conflicts:</th>
<th>Show cause and effect relationships:</th>
<th>Chronological progression of ideas:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similarly,</td>
<td>In contrast,</td>
<td>consequently, therefore,</td>
<td>To begin with,</td>
</tr>
<tr>
<td>In addition,</td>
<td>However,</td>
<td>therefore,</td>
<td>Initially,</td>
</tr>
<tr>
<td>To illustrate,</td>
<td>But</td>
<td>since,</td>
<td>First,</td>
</tr>
<tr>
<td>Likewise,</td>
<td></td>
<td>as a result,</td>
<td>Second,</td>
</tr>
<tr>
<td>Also,</td>
<td></td>
<td>otherwise,</td>
<td>Third,</td>
</tr>
<tr>
<td>Specifically,</td>
<td></td>
<td>unless,</td>
<td>In conclusion,</td>
</tr>
<tr>
<td>In other words,</td>
<td></td>
<td>due to the fact.</td>
<td>To summarize</td>
</tr>
<tr>
<td>Furthermore</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
