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Comparing the Effects of Choice and Performance Feedback on the Writing Fluency Outcomes of Elementary Students

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Outcomes of Elementary Students

By

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A Dissertation Submitted in Partial Fulfillment of the

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Abstract

Performance feedback is an effective intervention that improves the writing outcomes of elementary students. Although choice has been referred to as a powerful tool in improving the writing of students, little empirical research has been conducted that investigates the effectiveness of choice when implemented in a class-wide setting. Therefore, the current study used a randomized controlled trial design to compare the effects of performance feedback and choice on the writing fluency outcomes of 40 fourth-grade elementary students in one elementary school. Participants were randomly assigned to either a performance feedback condition ($n = 20$) or a choice condition ($n = 20$) for 4 weeks. Participants in the performance feedback condition demonstrated significant growth in their writing performance when compared to the writing performance of participants assigned to the choice condition. In addition, results found that participants' higher levels of interest in the story starter predicted increased writing productivity. Limitations of the study; practice implications, including considerations for the use of writing interventions in a class-wide setting and the incorporation of student interest into writing topics; and future directions are discussed.

Chapter 1

Introduction

When it comes to communicating and learning, writing is an essential and versatile tool that helps people accomplish a variety of objectives (Graham, 2012). Through the medium of writing, one can maintain personal relationships with family, friends, and colleagues, as well as collect, preserve, and disseminate information. Methods of communication have evolved dramatically in recent decades due to advances in technology. The regular use of email, text messaging, and social media provide evidence for how important writing continues to be across a variety of personal, educational, and workplace environments (Finlayson & McCrudden, 2020; Koster et al., 2015). Writing also plays a vital role in one's ability to comprehend and remember the material they are learning by allowing for analysis and evaluation of our ideas, establish connections between them, and explore untested assumptions (Applebee, 1984; Graham & Harris, 2019).

The impact that writing has on learning can be seen in a variety of contexts within the school environment. In two meta-analyses, Bangert-Drowns et al. (2004) and Graham and Perin (2007b) established that students' learning is enhanced when they write about content they are learning in social studies, science, mathematics, and language arts classes. In addition, writing about material they are reading helps with student comprehension and improves their reading skills (Graham & Harris, 2019). However, students that exhibit difficulty mastering basic writing skills often struggle communicating across school, work, and personal contexts (Koster et al., 2015), and

many students show limited improvements in their writing skills once they have learned how to structure a simple sentence (Salahu-Din et al., 2008). Therefore, it is important that writing is prioritized more in elementary schools, and that educators are equipped to effectively teach the components of the writing process and to implement interventions in their classrooms that enhance their students' development as writers.

Writing has been and continues to be among the primary academic concerns for educators. It is the second most common academic referral problem following reading concerns (Bramlett et al., 2002). According to the National Center for Education Statistics (2012), fewer than 30% of students in 4th-, 8th-, and 12th-grade write proficiently. Within the National Assessment of Educational Progress framework (National Assessment Governing Board, 2010), a proficient writer demonstrates competent writing skills over challenging subjects, such as subject-matter knowledge, applying such knowledge to situations essential for success in everyday life, and displaying appropriate analytic skills. In addition to the writing concerns at the elementary, middle, and high levels, a majority of college instructors have suggested that approximately half of high school graduates in the United States are not prepared to write at the college level (Maurer & Poblete, 2005), and many people are not capable of meeting the writing demands in the workforce (National Commission on Writing, 2003). Therefore, it is crucial that writing is examined in K-12 settings to ensure that students are more capable of proficient writing that will prepare them for the writing demands of colleges, universities, and the workplace.

Research has indicated that student outcomes can be improved when interventions are implemented at the class-wide level. For example, Hawkins et al. (2010) found that implementing listening preview and vocabulary preview strategies led to increases in reading comprehension and vocabulary knowledge for fourth-grade students. In addition, Burns et al. (2015) showed that partner reading is an effective class-wide strategy for improving student reading fluency in third-grade classrooms. Also, VanDerHeyden and Codding (2015) demonstrated improved outcomes for fourth-grade students participating in a class-wide mathematics intervention who were at-risk before the intervention began. Therefore, writing interventions should be implemented within classrooms to examine intervention practices and their impact on writing concerns (Barrett et al., 2020). Writing problems have become even more concerning following the COVID-19 pandemic, as writing concerns will likely be exacerbated considering the historical data that have demonstrated the poor writing outcomes of American students (National Association of School Psychologists, 2020). Consequently, now that students have returned to school, school psychologists need to be prepared to advocate for writing instruction that is evidence-based and targets all students at the class-wide level. Focusing on later elementary students' writing fluency is important because productive writing at this developmental stage is closely related to different aspects of writing quality (Kim et al., 2015; Nelson & Van Meter, 2007; Troia et al., 2019). Writing becomes more complex following fifth grade, where students are expected to produce more sophisticated writing that incorporates additional criteria and mental operations (Hayes, 2011). Therefore, it is imperative that research is conducted that aims at remediating writing difficulties for later

elementary students to determine which interventions are the most effective in improving student outcomes.

Writing Instruction Overview

Writing is an activity that can be extremely complex and challenging. Therefore, students should be given adequate time in their classrooms to develop effective writing strategies (Graham et al., 2012). To increase the writing achievement of elementary students, the What Works Clearinghouse Practice Guide for elementary writing (Graham et al., 2012) recommends that schools incorporate the following four strategies into their writing instruction:

1. Provide daily time for students to write.

2. Teach students to use the writing process for a variety of purposes.

3. Teach students to become fluent with handwriting, spelling, sentence construction, typing, and word processing.

4. Create an engaged community of writers.

The first recommendation should be incorporated into the school's curriculum beginning in first grade. Students should devote at least one hour per day to writing, with half of that hour focused on being taught a variety of writing strategies and then spending the other half of the hour practicing and applying the skills they learned from instruction. The second recommendation suggests that instruction be focused on teaching students to use the writing process for a variety of purposes. Components of the writing process include: (a) planning, (b) drafting, (c) sharing, (d) evaluating, (e) revising, (f) editing, and (g) publishing. To facilitate an understanding of the writing process, students need to also

be equipped with an understanding of the different purposes of writing. The four main purposes of writing that are emphasized by the Common Core State Standards (Council of Chief State School Officers & National Governors Association, 2010) include: (a) describing, (b) narrating, (c) informing, and (d) persuading/analyzing.

Teaching students to become fluent with handwriting, spelling, sentence construction, typing and word processing is the third recommendation put forth by Graham et al. (2012) for writing instruction. Teaching students to hold a pencil correctly; form letters fluently and efficiently; spell words correctly; construct fluent, meaningful, and stylized sentences; and fluent typing and how to use a word processor to compose are basic writing skills that help students develop and communicate their ideas more effectively. In upper elementary grades, morphological spelling, where students develop an understanding of the prefixes and suffixes of words, should be the primary spelling skill that is taught.

The fourth recommendation is that schools and educators create engaged communities of writers. Teachers should seek out opportunities within their community to write and share their own writing as well as provide students with writing choices. Giving students opportunities to practice writing in response to prompts is ideal, and prompts should align with writing instruction. Students should also be encouraged to collaborate with one another and be provided with feedback throughout the writing process. In addition, students should have opportunities to publish their writing both inside and outside of the classroom to encourage them with their writing and to promote the idea of becoming a writer.

In addition to the writing recommendations set forth by Graham et al. (2012), the Common Core State Standards (Council of Chief State School Officers & National Governors Association, 2010) provide a synthesis of the best elements of standards-related work aimed at preparing students for college and their careers, anchoring them in rigorous research and evidence-based practices that are internationally benchmarked and aligned with college and work expectations. In an elementary setting, the Standards suggest that kindergartners, first graders, and second graders develop skills to write opinions, informative/explanatory texts, and narrative events. Beginning in third grade, students should begin producing and distributing their writing. Then, in fourth grade, students should be supporting the analysis, reflection, and research of their writing with evidence from literary or informational texts. By the sixth grade, students' range of writing should encompass a variety of discipline-specific tasks, purposes, and audiences over shorter periods of time (e.g., 1-2 days) as well as longer periods of time that allow for research, reflection, and revision processes.

Despite these recommendations and standards, writing continues to be under-taught throughout the United States. The amount of time teachers actually spend teaching writing is quite limited and often fails to meet the recommendations put forth by Graham et al. (2012). Research has repeatedly demonstrated that writing instruction in the majority of classrooms across all grade levels is inadequate and insufficient, with the primary indicator being the lack of time that teachers devote to teaching writing. For example, Gilbert and Graham (2010) reported that third- and fourth-grade teachers from across the United States only spend 15 minutes per day teaching writing and that students

in their classes only spend 25 minutes per day writing at school. More recently, Brindle et al. (2016) surveyed teachers on their use of evidence-based writing practices in their classrooms and found that the majority of teachers reported using evidence-based practices (e.g., providing individual students with praise or positive reinforcement for some aspect of writing, teaching students strategies for planning, teaching basic writing skills, etc.), however they reported using them only several times per year. In addition, the findings from Brindle et al. (2016) replicated the findings of Gilbert and Graham (2010), with their survey indicating that teachers from across the United States spend 15 minutes per day teaching writing and their students spend 25 minutes per day writing. Therefore, the limited amount of time teachers spend teaching writing per day supports the need for schools nationwide to devote more time to evidence-based writing practices and writing instruction, particularly in the upper elementary grades.

Measuring Writing: Curriculum-Based Measurement (CBM)

Assessing a student's writing determines their ability level and the type of skills that they have acquired (Shapiro, 2011). Curriculum-based measurement in written expression (WE-CBM) is primarily used to evaluate student progress and to help determine the effectiveness of interventions (Malecki, 2014). Screening and identification are additional ways in which WE-CBM can be utilized as a tool for evaluating the effectiveness of curriculum and general education instruction (Espin et al., 2000; Malecki & Jewell, 2003; Marston & Deno, 1981). A direct method of assessing written expression involves evaluating a student's writing sample according to varying criteria, such as counts of a specific writing skill (e.g., total words written; Malecki, 2014). The

standardized administration of a WE-CBM involves a writing prompt or story starter that is presented to students who then think about the prompt for one minute before writing for three minutes. A goal of writing instruction should be to facilitate the writing process, and writing prompts can be used to facilitate written expression by priming desired responses (Hudson et al., 2005). Priming is the idea that when a person is exposed to a stimulus, such as a writing prompt, it subconsciously influences their response to a subsequent, related stimulus (Forster, 1999). Forster (1999) contends that priming (writing prompt) automatically activates the target (writing). Therefore, writing prompts are the catalysts for compositional tasks and serve as a prime to increase compositional fluency (Hudson et al., 2005).

The students' written expression performance is then scored using valid and reliable production-dependent measures, such as total words written (TWW) and/or correct writing sequences (CWS), which are two of the most appropriate scoring methods at the elementary-school level (Deno et al., 1980; Malecki & Jewell, 2003; Videen et al., 1982). TWW is an appropriate measure for elementary students due to its generalizability, and calculating it provides students with opportunities to receive feedback (Koenig et al., 2016).

Writing Fluency Interventions

Given the difficult and multifaceted nature of writing and students' historically poor writing performance (National Center for Education Statistics, 2012; National Commission on Writing, 2003), it is imperative that interventions are developed that enhance the writing fluency skills of students and implemented for use in elementary

classrooms, especially considering that writing is among the most difficult skills for students to master (Finlayson & McCrudden, 2020; Gillespie Rouse, 2019). Effective writing requires a complex interaction between cognitive-linguistic abilities, working memory, and motor functioning, along with spelling and handwriting skills, and the ability to construct sentences (Graham, 2006; Kellogg, 2008). Significant working memory demands can create cognitive loads for student writers that become overwhelming and lead to efforts of remediation throughout their elementary education (Roitsch et al., 2021). In fact, students who exhibit writing difficulties in first grade have been found to remain poor writers throughout the remainder of their educational years and beyond (Graham & Perin, 2007a; Juel, 1988). It has even been suggested that a failure to develop writing fluency skills are at the core of students' achievement problems (Graham et al., 2012).

Along with skill deficits, performance deficits are another factor within fluent writing production that should be considered when evaluating writing performance. However, measuring writers' motivation in the early stages of their education remains largely unresearched (Alves-Wold et al., 2023). Brindle et al. (2016) documented common nationwide instructional practices for writing in third and fourth grade classrooms, such as providing students with praise or positive reinforcement, providing feedback, and establishing goals for writing. Efforts made by teachers to evaluate students' writing motivation, however, were not indicated as a common writing practice used in classrooms. In addition, Alves-Wold et al.'s (2023) review of elementary

students' self-reports measuring writing motivation indicates the lack of valid instruments available for obtaining information on students' motivation to write.

Writing fluency is defined as a skill that enables students to communicate ideas in writing with speed and accuracy, and with minimal effort (Datchuk & Hier, 2019; Graham et al., 2012). Writers who demonstrate fluency manipulate sentence structures to produce coherent text with automatic handwriting, typing, and spelling skills (Graham et al., 2012). Students who do not exhibit writing fluency may be able to write quickly but inaccurately or they may write accurately but slowly. Developing writing fluency is a critical component for elementary students' academic success. For example, students in elementary grades who are fluent in writing connected text have achieved higher scores on state achievement tests in comparison to their same-age peers (Furey et al., 2016). Therefore, interventions targeting writing fluency in elementary grades can be beneficial because students at that age believe they can improve their writing performance and they have yet to form negative attitudes toward writing that inhibit their ability to improve (Harris et al., 2002; Saddler et al., 2004).

In general education classrooms, goal-setting, performance feedback, and tangible reinforcement have been found to be effective fluency interventions that supplement instruction across a variety of instructional practices (Eckert et al., 2009; Griffiths et al., 2006), although research has predominantly focused on reading and mathematics (e.g., Codding et al., 2007; Morgan & Sideridis, 2006). Fluency-building interventions have empirical support, where moderate to strong effects have been demonstrated (Eckert et al., 2009; Morgan & Sideridis, 2006). However, there is a lack of research on the efficacy

of writing interventions that target fluency, especially in the upper elementary grades at the class-wide level (Eckert et al., 2009; Truckenmiller et al., 2014). Therefore, it is important to not only conduct research at the class-wide level that replicates the outcomes of performance feedback as a fluency-based writing intervention, but to also investigate a novel fluency intervention that does not have empirical support as a writing fluency intervention: choice.

Performance Feedback Overview

Theoretical Framework of Performance Feedback. E. L. Thorndike's law of effect (Thorndike, 1898, 1911) proposes that when satisfactory results follow the behavioral responses of animals, animals will exhibit patterns of behavior that reoccur in response to the same positive stimulus. The law is often cited as the originating idea that propelled performance feedback (PF) as a long-standing method of instruction (Eckert et al., 2006). Thorndike (1931) later demonstrated that adult learning improves when practice is followed by feedback, rather than when practice is carried out without a feedback component. In subsequent research, Thorndike's theory tested by varying the quality of instructional feedback (i.e., right versus wrong) and the duration of feedback (i.e., continuous versus discontinuous) were manipulated; results suggested that feedback improved the performance of adults when working on discrete tasks (Newell, 1974; Trowbridge & Cason, 1932). In more recent research, the cognitive effects of feedback were being studied rather than its behavioral effects, with Singley and Anderson (1989) and Anderson (1993) demonstrating that cognitive processes are activated when feedback is presented following instruction, indicating that when a learner is provided with

feedback, it doesn't only change their behavior but it assists in their comprehension and application of the content.

Theoretical research on altering feedback has provided additional insight into its underlying mechanisms and effect on performance. For example, at least five dimensions of feedback have been proposed to increase its effectiveness: (a) precision, (b) immediacy, (c) frequency, (d) schedule, and (e) reactivity (Van Houten, 1980). Elder et al. (1973) and Whitehead et al. (1975) found that by providing immediate and precise feedback on physiological indicators such as skin temperature or blood pressure improves the effectiveness of feedback, which aligns with the idea that student learning of basic academic skills is enhanced with feedback that is highly precise and numerically quantified (Van Houten, 1980). Feedback that is immediate rather than delayed (Hillman, 1970; Trap et al., 1978); the provision of frequent, daily feedback when a student is learning a new skill (McLaughlin & Malaby, 1972; Saudargas et al., 1977; Van Houten, 1980) enhances student learning.

Performance Feedback and Writing. Research on performance feedback (PF) interventions focusing on writing fluency have been conducted for almost half a century, with the first study having been published by Van Houten et al. (1974). This study, along with additional studies conducted by Van Houten et al. (1975) and Van Houten (1979) demonstrated positive outcomes for writing fluency among elementary students and indicated that the intervention can be efficiently implemented by teachers. Despite the encouraging results stemming from these studies, questions emerged regarding the mechanism of the behavior change that resulted in positive student outcomes because

performance feedback itself was not an isolated component (Kazdin, 2008; Truckenmiller, 2014). Eckert et al. (2006) conducted the first published studies that isolated the performance feedback component in a writing intervention. They were able to demonstrate that performance feedback is an effective intervention that improves the writing fluency outcomes of third grade students in the general education classroom setting.

Truckenmiller et al. (2014) evaluated the impact of performance feedback on third-grade students' writing fluency growth at the class-wide level. In addition to using TWW as their primary dependent variable to measure fluency, they used CWS as a quality measure to detect the students' growth in writing fluency over an eight-week period. They found that performance feedback is an effective component of writing intervention and a primary change agent in improving the writing fluency outcomes of elementary students, with a moderate and statistically significant effect (Hedges' g = 0.66).

Koenig et al. (2016) also evaluated the writing fluency growth of third-grade students at the class-wide level, comparing its effectiveness to goal setting and control conditions. Like Truckenmiller et al. (2014), Koenig et al. (2016) assessed students' writing fluency outcomes by calculating both TWW and CWS. They found that performance feedback is an effective writing intervention in improving elementary students' writing fluency growth by demonstrating an average weekly increase of approximately 1.88 to 2.11 CWS over the course of the eight-week study. These

outcomes were higher than national norms for typical class-wide instruction, which have indicated a growth of 0.33 CWS per week (Pearson Education, 2015).

Strengths of Performance Feedback. A primary strength of performance feedback is that it is an essential component of behavior regulation that results in improved outcomes across a variety of academic domains for students of all ages (Gersten et al., 2009; Hattie & Timperley, 2007; Heubusch & Lloyd, 1998). The feedback a student receives on their academic outcomes motivates them to alter their behavior and reduce a discrepancy because of the comparison of their performance to that of some standard performance, or their desire to exceed the standard performance (Carver & Scheier, 1982; Hattie & Timperley, 2007). Another strength of performance feedback lies within its ability to build confidence for students (Graham & Harris, 2019). When given feedback on their writing by teachers, students' learning is enabled because they're provided with suggestions for where and how to employ more effort in their writing, and evaluations regarding the progression of their writing skills, strategies, or knowledge are better understood (Paas et al., 2012).

Choice Overview

Theoretical Foundation. The primary function of giving students the opportunity to choose is to motivate their academic performance by providing them with a sense of autonomy (Aitken et al., 2022; Graham, 2005). As a result, students' motivation to complete a task is theoretically augmented because they incorporate a higher level of interest in the topic, which ultimately leads to increased persistence and enhanced performance (Deci & Ryan, 2000). A primary driver of this theoretical foundation on

why choice matters in academics can be found in Deci's (1980) self-determination theory and Ryan and Deci's (2000, 2019) subsequent sub-theory, cognitive evaluation theory. Self-determination theory states that motivation is enhanced when individuals are free to make their own choices, resulting in a higher sense of self-confidence and an increased ability to apply the necessary resources and effort to complete a task (Deci, 1980). Cognitive evaluation theory posits that motivation and performance are enhanced when perceived competence and autonomy co-occur (Ryan & Deci, 2000, 2019). Therefore, given the theoretical benefits of choice, it can be considered a promising tool for improving the outcomes of students' writing.

Choice and Writing. Choice has been commonly referred to as a powerful tool in improving the writing of students (Beaton, 2010; Calkins, 2020; Hamel, 2017). In fact, teachers have indicated that choice can be advantageous for students, especially for students who have demonstrated disinterest in the writing process because it provides them with a sense of control (Flowerday & Schraw, 2000). However, despite the benefits that have been presumed on the impact of choice on writing, there has been very little empirical research conducted on the topic. Of the studies that have investigated its effects, evidence regarding choice has been found to not be a statistically significant factor in improving the writing performance or writing quality of students (Barry et al., 1997; Ennis et al., 2017; Gabrielson et al., 1995; Juliebo & Edwards, 1988; Kim & Kim, 2016). In a pilot study, Seifert et al. (2023) investigated the effect of choice on the writing fluency outcomes of two fifth-grade students performing below grade-level expectations. Choice of writing prompts was found to not be a significant factor in

improving the TWW of the two students. Results indicate a need for further investigation on the use of choice as a writing intervention for elementary students.

Strengths of Choice. Providing meaningful choices for students in the classroom enhances and benefits their well-being, moral development, and decision-making skills (Kohn, 1993). When utilized as an educational practice, choice has led to increases in cognitive engagement, positive affect, creativity, learning, and achievement for students (Kohn, 1998). High school students, for example, were found to display higher rates of interest, effort, and academic engagement when teachers provided them with choice in the classroom (Flowerday & Schraw, 2000). In addition, providing high school students with a choice of how and when to complete homework and what to work on in class resulted in students feeling more engaged and competent (Patall et al., 2010; Urdan & Schoenfelder, 2006). Providing choice to elementary students in physical education and reading has been found to increase their vitality and enjoyment levels and enhance the quality of their searching strategies (Mouratidis et al., 2011; Reynolds & Symons, 2001).

Student Acceptability of the Performance Feedback and Choice Interventions

Examining students' involvement in academic interventions is a critical component for research being conducted in elementary settings due to the students' ability to provide direct feedback on the intervention's acceptability (Eckert et al., 2017). Students' academic achievement has been found to increase with their acceptability of the intervention (Mautone et al., 2009). Specifically, their mastery and competence of academic skills as well as their autonomy, self-efficacy, and motivation have increased when they have viewed interventions as acceptable (Schunk, 1996; Stipek, 1996).

Documenting intervention acceptability as an indicator of external validity aligns with the reporting standards of the fields of school psychology (Kratochwill & Shernoff, 2004) and special education (Losinski et al., 2014), and it can be a significant factor for school psychologists when consulting with teachers and school staff regarding the implementation of class-wide academic interventions (Arra & Bahr, 2005). In Truckenmiller et al. (2014) and Koenig et al.'s (2016) investigations on the impact of performance feedback on the writing fluency outcomes of third-grade students, they found that students in the intervention conditions rated the procedures as highly acceptable. Specifically, participants in Koenig et al. (2016) indicated that it was helpful to know how many words they wrote and that they felt their writing had improved as a result of the intervention.

Student Interest with the Story Starter

A novel examination included in this study was to measure the degree of interest elementary students report regarding the topic of the prompt, or story starter. The effect of choice on student learning and attitude to gauge how topic interest affects reading engagement has been examined (e.g., Flowerday et al., 2004; Schraw et al., 1998). However, measuring the degree to which interest with a story starter impacts students' motivation to write had yet to be investigated. Hidi and McLaren (1990) did not identify empirical evidence of how student interest is related to writing performance in their literature review. In Coker's (2006) investigation of the impact of factors contributing to the growth of students' descriptive writing from first- to third-grade, a lack of interest in the writing prompt was offered as a potential explanation for the deterioration of some

students' performance. Considering that previous research has indicated that increases in attention, concentration, effort, willingness to learn, and knowledge acquisition are believed to result from individual interest (Renninger, 1992), and there is a small correlation ($r = .30$) between individual interest and academic achievement (Schiefele et al., 1992), results from the current study may prove to be insightful for future research regarding selecting topics that motivate students to write more words. In addition, information on student interest may provide teachers with opportunities to increase the amount of time they spend on writing instruction due to the motivating effects that writing about topics of interest may have on students' writing fluency outcomes.

Current Study

The primary goal of the current study was to add to the empirical literature on the effects of performance feedback as a writing fluency intervention and to investigate the effects of choice on the writing fluency outcomes of fourth-grade general education students. In addition, this study sought to examine intervention acceptability by the students participating in the study as well as to record the students' interest regarding the story starter prompts. To accomplish these goals, the following research questions were posed to guide the study:

1. Is performance feedback or choice a more effective intervention in improving the total words written (TWW) produced by fourth-grade students?

2. Do the performance feedback and choice interventions promote generalized writing skill growth?

3. What impact does the level of student interest in the story starter have on 4th-grade students' writing productivity?

4. To what extent are performance feedback and choice considered acceptable interventions by students as measured by the Kids Intervention Profile (KIP)?

Previous research has indicated that performance feedback is an effective intervention in improving the writing fluency outcomes of elementary students (e.g., Koenig et al., 2016; Truckenmiller et al., 2014), therefore it was hypothesized that the performance feedback writing intervention would increase the TWW of the students to a greater extent than the choice condition. It was also hypothesized that both writing conditions would promote generalized writing skills and that students' writing productivity will be predicted by higher levels of interest in the story starter. In addition, given that third grade students participating in Truckenmiller et al. (2014) and Koenig et al.'s (2016) studies rated the procedures as moderate, it was hypothesized that those results would be replicated in this proposed study and that the fourth-grade participants will rate the performance feedback and choice procedures as moderately acceptable.

Chapter 2

Methods

IRB Review and Permissions

An application was submitted to the Minnesota State University, Mankato Institutional Review Board (IRB) for their review. Approval was obtained from the IRB on October 6, 2023 (IRB# 2087706). Next, approval from the Mankato Area Public School District's Director of Teaching and Learning (dated 11/6/23) and the building principal (dated 11/29/23) were obtained. Two copies of the consent form (Appendix A) were then sent to prospective participants' parents or legal guardians requesting their signature on one to indicate that they agreed to have their child participate in the study. The other copy of the form was sent home so that parents or guardians could keep one for their own records. Parental consent was obtained for all but one of the students invited to participate in the study. Prior to the start of the study, the principal investigator verbally read a child assent form (Appendix B) to students whose parents provided consent. Every student eligible to participate in the study provided their assent.

Participants and Setting

Two fourth-grade general education classroom teachers and 46 students were recruited for the current study. One student's parents did not provide consent, one student was excluded from the study because they received special education support in a resource room during the writing time, and four additional students' writing were excluded from the final analyses because they participated in fewer than nine writing sessions. Therefore, a total of 40 participants were included in the analyses for the study.

There was an equal number of female participants ($n = 20$) and male participants ($n = 20$). The setting was two fourth-grade general education classrooms within a public school district located in a moderate-sized city in the Midwestern United States. The classrooms were located next to each other, and a third classroom adjacent to the two classrooms served as the setting for students to makeup sessions that they had missed. The third classroom was designed to operate as a general education classroom but was not currently being used by the school. Writing was scheduled for a period of 25 minutes each day in both classrooms from 11:40am-12:05pm, which falls short of the recommended 30 minutes of daily dedicated writing instruction (Graham et al., 2012). Teachers reported that they attempt to embed writing throughout the day across other subjects, but likely fall of short of the recommendation that students spend at least one hour per day on writing (Graham et al., 2012).

Interventionists

Four doctoral school psychology students, including the primary researcher, one undergraduate student majoring in psychology, and both fourth-grade general education teachers administered the sessions at various times throughout the course of the study. The primary researcher trained the secondary researchers and teachers by providing them with an overview of the study and procedural scripts for conducting and calculating procedural integrity observations prior to formal implementation. The secondary researchers received training on scoring the total words written (TWW) on dependent measures, which included opportunities to practice and receive feedback following their scoring of writing samples. Following training, the secondary researchers and general

education teachers were required to demonstrate proficiency by obtaining 95% accuracy on observing and scoring the steps of two practice writing sessions. In addition, the secondary researchers were required to demonstrate proficiency in scoring the dependent measures by obtaining 95% accuracy on two fourth-grade level writing samples prior to the start of the study. The secondary researchers and general education teachers demonstrated 100% proficiency in conducting and calculating procedural integrity observations. The secondary researchers demonstrated 100% proficiency in scoring the writing samples following the two practice writing sessions.

Materials

The materials used in this study were: (a) Woodcock-Johnson, Fourth Edition Tests of Achievement Test Book, (b) Woodcock-Johnson, Fourth Edition Tests of Achievement Form A response booklets, (c) pre-test and post-test writing packets, (d) performance feedback writing packets, (e) choice writing packets, (f) procedural checklists, (g) student intervention acceptability assessment, (h) pencils, (i) printer paper, and (j) personal cellphone timer applications.

Woodcock-Johnson, Fourth Edition Tests of Achievement

The Woodcock-Johnson, Fourth Edition Tests of Achievement (WJ IV ACH; Schrank et al., 2014) is a norm-referenced instrument that is useful in screening, diagnosing, and monitoring progress in reading, writing, and mathematics for people ranging in age from 2-90+ years old. For the current study, the WJ IV ACH test book and Form A response booklets were used to administer the sentence writing fluency subtest to all student participants to measure their general writing abilities by having them

formulate and write simple sentences quickly. The students were asked to write sentences for a period of five minutes in response to a visual stimulus using a set of three given words. A standardized writing achievement score was generated based on each participant's performance and was used to randomly assign matched pairs of participants to one of two conditions, described below.

Pre- and Post-Test Writing Packets

The writing packets for the pre-test and post-test sessions consisted of one, two-sided page and were used for the first (pre-test) and last (post-test) sessions of the study. The front of the page included space at the top for the students to write their names, followed by a randomly assigned Curriculum-Based Measurement Written Expression (CBM-WE) story starter. A stop sign appeared in the middle of the page, which was placed there with the intention of preventing the student from turning the page over. The back of the page was lined and featured the story starter at the top of the page followed by an ellipsis to indicate that the student will continue writing their story. A question designed to gauge the degree to which to the students were interested in writing about the topic of the story starter appeared at the bottom of the page accompanied by a five-point Likert scale to indicate how much they enjoyed the topic, ranging from a sad face indicating that they really disliked writing about the topic to a happy face indicating that they really enjoyed writing about the topic. See Appendix C for an example of a pre- and post-test writing packet.

PF Writing Packets

The students assigned to the PF writing condition received writing packets consisting of two pages. The first page contained the student's name along with their individualized performance feedback. Following the pre-test writing session only, the feedback page featured the total number of words the students wrote in a box on the middle of the page with a stop sign at the bottom to prevent the student from previewing the next page. All other performance feedback sheets featured a box on the left side of the page with a number that represents the total number of words the student wrote during the previous session. On the right side of this page, a corresponding arrow appeared and faced upwards or faced downwards to indicate that the student wrote more words or less words than they wrote during the session prior to the most recent session. If the student wrote the exact same number of words than they did on the previous session, then an equal sign appeared on the right side of the page rather than a corresponding arrow. The second page of the packet was identical to the pre-test and post-test writing packets. That is, the second page of the packet included the students' names at the top followed by a randomly assigned CBM-WE story starter. A stop sign appeared in the middle of the page, which was placed there with the intention of preventing the student from previewing the back of the page. The back of the second page was lined and featured the story starter at the top of the page followed by an ellipsis to indicate that the student will continue with writing their story. A question designed to gauge the degree to which to the students were interested in writing about the topic of the story starter appeared at the bottom of the page followed by a five-point Likert scale to indicate how much they enjoyed the topic, ranging from a sad face indicating that they really disliked writing

about the topic to a happy face indicating that they really enjoyed writing about the topic. See Appendix D for an example of a Performance Feedback Writing Packet.

Choice Writing Packets

The students assigned to participate in the Choice writing condition received writing packets consisting of two pages. These packets were identical to the pre-test and post-test writing packets with the main difference being that the Choice writing packets contained two story starters instead of just one. The two pages featured space at the top for the students to write their names, followed by a different, randomly assigned CBM-WE story starter on each page, and a stop sign in the middle. The students were then instructed to choose between the two story starters based on which one they wanted to write about more for that session. The back sides of the two pages were lined and featured the story starters at the top of each page followed by an ellipsis to indicate that the students will continue with writing their story. A question designed to gauge the degree to which to the students were interested in writing about the topic of the story starter appeared at the bottom of each page followed by a five-point Likert scale to indicate how much they enjoyed the topic, ranging from a sad face indicating that they really disliked writing about the topic to a happy face indicating that they really enjoyed writing about the topic. See Appendix E for an example of a Choice Writing Packet.

Procedural Checklists

Procedural checklists were used throughout the course of the study to facilitate administration of the specific writing conditions and to ensure that sessions adhered to procedural fidelity. The checklists were provided to the secondary researchers and

general education teachers by the primary researcher prior to each session. All researchers placed checkmarks or an "X" in boxes next to each step to indicate that the step was completed. The checklist for the pre- and post-test writing conditions contained 11 steps, the checklist for the performance feedback condition contained 11 steps, and the checklist for the choice condition contained 14 steps. See Appendices A-C for examples of each procedural checklist.

The Kids Intervention Profile (KIP)

The Kids Intervention Profile (KIP; Eckert et al., 2017) is an eight-item, five-point Likert scale used to assess student intervention acceptability. Student participants completed the KIP prior to being administered the post-test on the final day of the study. The KIP records student responses ranging from *not at all* to *very, very much*. Eckert et al. (2017) examined the psychometric properties of the measure with 228 students averaging 8 years, 4 months old from 25 general education classrooms, which suggested adequate internal consistency (Cronbach's $\alpha = .79$) and test-retest reliability ($r = .70$). See Appendix F for an example of the KIP.

Additional Materials

Each student was asked to use their own sharpened no. 2 pencil with an eraser for each session. The primary researcher provided the two general education teachers with 75 pre-sharpened no. 2 pencils each to distribute in the event that a student did not have a pencil on a given day. Two reams of paper totaling 1,000 sheets were purchased to print consent forms, writing packets, procedural checklists, and the KIP. All researchers and both general education classroom teachers used timer applications on their personal cell

phones throughout the study to adhere to the 1-minute time limit to think about the story

starter and the 3-minute time limit for students to complete their writing. Lastly, grade

appropriate CBM-WE story starters from Hosp et al. (2016) were reviewed with teachers

and approved by them prior to being randomly assigned and included in each of the

writing packets.

Response Definition and Measurement

The performance feedback and choice conditions served as the independent

variables in this study, with the primary dependent variable being the students' total

number of words written (TWW), which was used as a measure of their writing fluency

outcomes. TWW represents the total number of words students generated during the

three-minute writing period and is considered an appropriate, reliable, and common

measure that is often used with elementary student populations to monitor writing fluency

(Hosp et al., 2016; Truckenmiller et al., 2014). Expected writing fluency performance at

the 50th percentile for fourth-grade students during the winter of a standard academic year

has been normed at 41.0 TWW (Pearson Education, 2015). Although correct word

sequences (CWS) is considered to be a suitable quality and achievement measure for

students in later elementary (Hosp et al., 2016), TWW was selected as the primary

dependent variable because it is easily understood by elementary students when feedback

is provided to them on their writing productivity (Koenig et al., 2016; Truckenmiller et

al., 2014). Hosp et al.'s (2016) scoring procedures for calculating TWW was used for this

study. To calculate TWW, the total number of words that students wrote during the three-

minute writing period were counted. Any word or group of letters that were written and

separated by a space were counted, including misspelled and nonsense words. Unusual characters (e.g., &, $, %) meant to take the place of a word and numbers written in numerical form (e.g., 4, 30, 803) were not included in the total word count with the exception of dates (e.g., Today is August 13, 2016 = 5 TWW) and currency (e.g., I have $50 = 3 TWW).

Experimental Design and Data Analysis

A randomized controlled trial design was used in this study. Following the administration of the sentence writing fluency subtest in the WJ IV ACH, students across both classrooms were ranked from highest to lowest according to the standard score they obtained. The highest scoring student and the second highest scoring student were then grouped into a dyad and randomly assigned to participate in one of the two writing conditions (e.g., PF or Choice) using a random number generator. The third highest scoring and fourth highest scoring students were then grouped into a dyad and randomly assigned to one of the two writing conditions. This process continued for all remaining students until each participant was assigned to either the PF or Choice condition.

An analysis of covariance (ANCOVA) was used to analyze the differences between the two writing conditions while controlling for the effects of the pre-test session. An ANCOVA was deemed an appropriate test to analyze the differences because it allows for an accurate assessment of the relationship between the two writing conditions and the post-test TWW. By controlling for the effects of the pre-test session, a more accurate understanding of the post-test TWW can be determined because ANCOVA adjusts for preexisting differences between participants in the two conditions.

Partial eta squared was used to report the degree of effect the independent variables (the performance feedback and choice conditions) have on the dependent variable (TWW). Partial eta squared is widely used in educational research and can be used to compare the effects of different between-subjects factors in the same design (Richardson, 2011). In addition, a paired-samples t-test was used to determine if the interventions promoted generalized writing skills by comparing the means of students' pre-test writing TWWs with the means of their post-test writing TWWs. The responses of the students' interest with the writing topic was also reported using data from the five-point Likert scale, with a mean response per prompt indicating overall interest among the participants. A simple linear regression was then run to analyze the relationship between student interest and writing productivity.

Procedures

The procedures of this study were guided by similar writing intervention procedures used by Truckenmiller et al. (2014) and Koenig et al. (2016). The study was conducted over a period of four weeks. Sessions conducted during the first week included the administration of the WJ IV ACH sentence writing fluency subtest and the pre-test writing probe with makeup opportunities for absent students being offered on the days following each administration. Sessions conducted during the second and third weeks included the administration of writing probes for students in both the PF and Choice conditions from Monday through Thursday with Fridays being reserved for students to makeup a writing session if they were absent on a given day that week. Sessions conducted during the fourth week included the administration of the KIP and the post-test

writing probe on Monday with makeup opportunities for absent students being offered on Tuesday.

Sessions for each writing condition were conducted simultaneously during the fourth-grade scheduled writing time on regular school days and lasted approximately 10 minutes from 11:35am until 11:45am. They were administered in a group format by the researchers or the general education classroom teachers in the students' regular classrooms. Approximately half of the students in each classroom had to travel to the other classroom to accommodate the random assignment of students to their respective condition. The teachers were provided with an overview of the study prior to formal implementation. They received direct training on how to administer sessions using the procedural scripts and how to record procedural integrity while observing sessions. Three school psychology doctoral students and one undergraduate student majoring in psychology served as secondary researchers.

Performance Feedback Condition

A writing packet containing the students' identifying information, their individualized performance feedback, and a CBM-WE story starter were distributed to each student participating in the PF condition. The feedback was provided to the students both visually and orally, with the visual presentation being in the form of a feedback page in the writing packet and the oral presentation being a review of the students' previous writing outcomes by the primary researcher, secondary researchers, or the general education teacher. The students' TWW from the pre-test was included in a box on the left side of the feedback page accompanied by an equal sign on the right side of the page for

the first session only. All subsequent PF sessions contained the student's TWW from the previous session and an arrow pointing upwards to indicate an increase in their TWW, an arrow pointing downwards to indicate a decrease in their TWW, or an equal sign to indicate that the student's TWW was exactly the same as the session prior to the previous session. The researchers or general education teachers then read the instructions on the procedural script, including the story starter. The students were then asked to think about the story starter for one minute and then write about what happens in their story for a period of three minutes. At the conclusion of the three minutes the students were asked to stop writing. They were then instructed to indicate their degree of interest in the writing topic on the five-point Likert scale at the bottom of the page before having their writing packets collected. Following each session, the students' TWWs were scored by the primary researcher with 45% of the sessions scored by secondary researchers to measure interscorer agreement.

Choice Condition

Writing packets containing two CBM-WE story starters were distributed to each student participating in the Choice condition. The primary researcher, secondary researchers, or general education teacher then read the instructions on the procedural script, indicating that the students can choose one of the two story starters to write about. Once the students made their choice, they were then asked to think about the story they chose for one minute before writing about what happens for three minutes. At the conclusion of the three minutes the students were asked to stop writing. They were then instructed to indicate their degree of interest in the writing topic they chose on the five-

point Likert scale at the bottom of the page before having their writing packets collected. Following each session, the students' TWWs were scored by the primary researcher with 45% of the sessions scored by secondary researchers to measure interscorer agreement.

Student Intervention Acceptability Assessment

The Kids Intervention Profile (Eckert et al., 2017) was used to assess the students' perceptions of the performance feedback and choice conditions. The KIP was administered to all participants prior to the post-test writing session. The primary researcher and one secondary researcher read the directions, items, and response options aloud in a group format to increase the likelihood of student comprehension of the items and completion of the measure. Means and standards deviations of the student responses were calculated to determine the students' perceptions of the acceptability of the interventions used in this study.

Procedural Integrity and Interscorer Agreement

Malecki's (2014) curriculum-based measurement in written expression (CBM-WE) procedural script was adapted for use during each writing condition. The secondary researchers or general education teachers assessed procedural integrity for 50% of the sessions via secondary observation by documenting whether each step on the procedural script either occurred or did not occur. Falakfarsa et al. (2022) reported that the average number of sessions used to record procedural integrity in articles published from 2008-2019 was 48%, which guided the decision to record procedural integrity for 50% of the sessions for the current study. To calculate procedural integrity, the number of steps completed for each condition was divided by the total number of steps required and then

multiplied by 100. The mean percentage of procedural integrity recorded for the sessions was 100%.

To determine the reliability of the primary researcher's scoring of the students' writing, interscorer agreement for TWW was calculated for a total of 192 writing packets (45%). This percentage is similar to the Koenig et al. (2016) study that calculated interscorer agreement for 37% of the sessions. For pre-selected sessions, the primary and secondary researchers independently scored the students' writing outcomes according to Hosp et al.'s (2016) scoring procedures and then compared their scores to determine interscorer agreement. If a discrepancy occurred, the probes were reexamined by the two researchers to determine a final score that was used in the analyses. The percent of interscorer agreements for TWW was calculated by dividing the number of agreements by the number of agreements and disagreements and then multiplying that outcome by 100. The mean percentage of interscorer agreement was 99.3%.

Chapter 3

Results

Descriptive Analyses

An exploration of the pre-test data for all participants revealed that the minimum pre-test score was 4 TWW, the maximum score was 64 TWW, and the mean was 31.2 TWW (SD = 15.2). The minimum post-test score was 3 TWW, the maximum post-test score was 81 TWW, and the mean post-test score was 39.2 TWW (SD = 16.8). For the participants assigned to the PF condition, the mean pre-test score was 28.3 TWW (SD = 16.4). In the Choice group, the mean pre-test score for participants was 34.5 TWW (SD = 13.5). The mean pre-test score was higher for participants in the Choice condition compared to participants in the PF condition. As shown in Table 1, the mean post-test score for participants in the PF condition increased to 47.0 TWW (SD = 16.4) while the mean post-test score for participants in the Choice condition decreased to 30.6 TWW (SD = 12.6).

Effects of PF and Choice

An ANCOVA was used to determine if there was a statistically significant difference between the two writing conditions on participants' post-test TWW. Verifying that (a) the pre-test baseline TWW and the two writing conditions are independent of each other, and (b) that the variances among the two writing conditions are equal are assumptions of an ANCOVA that need to be met prior to conducting the test. To check the assumption that the pre-test baseline TWW and the two writing conditions are independent of each other, the homogeneity of regression slopes was evaluated to

indicate if there is a significant interaction between the pre-test TWW and the two writing conditions. The result indicated that there was homogeneity of regression slopes as the interaction term was not statistically significant, $F(1, 34) = 0.02$, $p = 0.88$. A Levene's Test was conducted to check the assumption that the variances among the two writing conditions are equal. The result was not significant, $F(1, 36) = 0.16$, $p = 0.69$. This result indicates homogeneity of the residual variances for both groups.

Results of an ANCOVA (see Table 1) showed significant differences in overall writing outcomes between the two writing conditions in the post-test TWW when controlling for pre-test performance, $F(1, 35) = 19.62$, $p < 0.0001$. The pre-test covariate was also significant, $F(1, 35) = 11.78$, $p < 0.01$, indicating that students' pre-test TWW had a significant effect on their writing gains following the intervention on the post-test TWW. Tukey's Test was then performed to indicate if there is a statistically significant difference in post-test TWW between the PF condition and the Choice condition. Results indicated that there was a statistically significant difference between the two writing conditions (p < 0.0001). In addition, the Bonferroni multiple testing correction was applied to identify if the two writing conditions were different. The mean TWW score was significantly greater (p < 0.0001) in the PF group (48.16 +/- 2.91) compared to the Choice group (29.26 +/- 3.07). This finding supports participants in the PF condition performed significantly better than the participants in the Choice condition based on their adjusted means (PF = 48.16, Choice = 29.26). Partial eta squared was then used to measure the effect size and indicated a large effect ($\eta^2 = 0.27$).

Generalization

A paired-samples *t*-test was conducted to compare the means of the pre-test TWW and post-test TWW for both conditions to determine if the interventions promote generalized writing skills. The *p*-value of the *t*-test for the PF condition was significant, $t(20) = 5.36$, $p < 0.0001$, indicating that the mean TWW on the pre-test is significantly different than the mean TWW on the post-test. The effect size, as measured by Cohen's *d*, was d = 1.17, indicating a large effect. This result provides evidence to support the use of PF as a writing intervention to promote generalized writing skills for elementary students. The *p*-value of the *t*-test for the Choice condition was not significant, $t(18) = -1.00$, $p = 0.33$), indicating that the mean TWW on the baseline pre-test is not significantly different than the mean TWW on the post-test. The effect size, as measured by Cohen's *d*, was $d = -.23$, indicating a small effect. This result did not support utilizing Choice as a writing intervention to promote generalized writing skills for elementary students.

Impact of Student Interest

A simple linear regression was conducted to analyze the relationship between student interest and writing productivity (see Table 2). Both the *p*-values for the intercept ($p < 0.001$) and the predictor variable (student interest; $p < 0.001$) were highly significant, indicating that there was a significant positive relationship between student interest and writing productivity, with a 3.36-unit (+/- 0.76) increase in writing productivity for every unit increase in student interest (see Figure 1).

Student Intervention Acceptability Assessment

As shown in Table 3, students participating in the PF condition rated the acceptability of the procedures higher ($M = 4.05$, $SD = 1.10$) than students participating in the Choice condition ($M = 3.61$, $SD = 1.09$), and the overall appraisal of both interventions was positive. Further examination revealed that students participating in the PF condition liked knowing how many words they previously wrote ($M = 4.16$, $SD = 1.12$) and believed it was helpful to know how many words they had produced ($M = 3.95$, $SD = 1.22$). Students across both conditions reported not liking being told what to write about ($M = 2.89$, $SD = 1.06$). Lastly, students participating in the PF condition felt their writing had improved ($M = 3.70$, $SD = 0.86$) more than students participating in the Choice condition ($M = 3.31$, $SD = 0.87$).

Chapter 4

Discussion

The primary aim of the current study was to add to the existing research on the effects of Performance Feedback (PF) as a writing fluency intervention and to investigate the effects of Choice on the writing fluency outcomes of fourth-grade general education students. Empirically-validated writing interventions implemented at the class-wide level that target the writing fluency skills of elementary students are needed given that fewer than 30% of students in fourth-grade are capable of proficient writing (National Center for Education Statistics, 2012). In addition, the National Association of School Psychologists (NASP; 2020) indicated that the COVID-19 pandemic likely exacerbated writing concerns considering the historical data regarding poor writing outcomes of American students, thus prompting the need for school psychologists to advocate for the use of class-wide, evidence-based writing instruction. The current study also sought to determine if these interventions promoted generalized writing skills and the extent to which students considered the interventions to be acceptable. Lastly, this study examined the impact student interest in the story starter had on their writing productivity.

Effects of PF and Choice

PF has been proven to be an effective intervention that improves the writing outcomes of elementary students (Eckert et al., 2006, 2009; Hier & Eckert, 2014; Koenig et al., 2016; Truckenmiller et al., 2014). Although Choice has been referred to as a powerful tool in improving the writing of students (Beaton, 2010; Calking, 2020; Hamel, 2017), little empirical research has been conducted that investigates the effectiveness of

Choice when implemented in a class-wide setting. Therefore, the current study used a randomized controlled trial design to examine and compare the effects of two writing conditions, PF and Choice, on the writing fluency performance of 40 fourth-grade elementary students. It was hypothesized that students participating in the PF condition would increase their total words written (TWW) to a greater extent than students participating in the Choice condition. This hypothesis was supported as students participating in the PF condition demonstrated significant growth in their writing performance when compared to the writing performance of students assigned to the Choice condition. On average, students participating in the PF condition increased their academic productivity by 18.7 TWW over the course of the study. That is, their mean TWW increased from 28.3 (SD = 16.4) on the pre-test to 47.0 (SD = 16.4) on the post-test. This result supports and extends previous research that demonstrated student growth in writing fluency following the implementation of a PF intervention (Eckert et al., 2006, 2009; Hier & Eckert, 2014; Koenig et al., 2016; Truckenmiller et al., 2014). In contrast, the mean TWW for participants in the Choice condition decreased by 3.9 over the course of the study. This group's mean TWW dropped, from 34.5 (SD = 13.5) on the pre-test to 30.6 (SD = 12.6) on the post-test. This result corresponds with previous research that found Choice to not be a significant factor in improving the writing productivity of students (Barry et al., 1997; Ennis et al., 2017; Gabrielson et al., 1995; Juliebo & Edwards, 1988; Kim & Kim, 2016).

The increase in writing performance for students participating in the PF condition compared to the decrease in writing performance for students participating in the Choice

condition provides evidence to support the use of PF as an effective intervention to implement at the class-wide level. Factors that may have contributed to the effectiveness of PF in the current study include: (a) students had the opportunity to compare their scores and, (b) students were motivated to surpass their scores given their awareness of their previous performance. In addition, PF is an intervention that can be implemented at the class-wide level with little effort and low cost, making it an appealing option for educators aiming to increase the writing productivity of their students. Students participating in the Choice condition were not provided with feedback on their performance, which may have factored into the decrease in their writing output. Without a standard with which to compare their scores, students may not have been motivated to write productively and/or their enthusiasm for the writing task may have diminished over the course of the study.

Students participating in the PF condition exceeded expected writing performance while students participating in the Choice condition performed at a level expected of third-grade students during the fall of a standard academic school year. Expected writing performance fluency for fourth-grade students during the winter of a standard academic school year has been normed at 41.0 TWW (Pearson Education, 2015). The expected weekly growth rate for fourth-grade students is 0.25 TWW (Tadatada, 2011). The weekly growth rate for students participating in the PF condition averaged 6.23 TWW while the weekly growth rate for students participating in the Choice condition averaged -1.30 TWW. Therefore, given the significant growth in the writing productivity of students participating in the PF condition, the current study supports the use of PF as an effective

writing intervention that can be implemented class-wide to increase fourth-grade students' writing productivity. In addition, the current study contributes to the existing literature base on the effects of PF as an effective writing fluency intervention.

Generalization

An additional aim of this study was to determine if the interventions promote generalized writing skills. That is, are the interventions supported as tools to increase the writing productivity of fourth-grade students? It was predicted that both the PF and Choice interventions would promote students' writing productivity. However, this hypothesis was not supported, as the mean TWW for students participating in the Choice condition decreased from the pre-test to the post-test. In addition, statistical analyses revealed a small effect size and did not indicate a significant difference between the two measures. Nevertheless, analyses of the PF condition support its generalizability, with a significant difference indicated between the pre-test and post-test ($p < 0.0001$) and a large effect size ($d = 1.17$). Overall, the degree to which the findings from the current study can be generalized to a broader elementary population is limited considering the study was conducted with only 40 fourth-grade students from one school.

The writing productivity of students participating in the Choice condition may not have increased due to a variety of reasons. For example, students in this condition were not provided with feedback that evaluated their writing productivity. Students were not provided with feedback because a primary aim of the study was to isolate and compare the effects of PF and Choice to determine if one intervention was more effective than the other in improving students' writing productivity. In addition, Choice participants did not

have a standard to compare their performances which, ultimately, may not have motivated them to increase their writing production. One factor indicated as a strength of PF is that students gain knowledge as a consequence of feedback (Paas et al., 2012). They become aware of how to employ more effort in their writing, which motivates them to learn and improves their academic outcomes. Another factor indicated as a strength for PF is its inherent ability to build confidence for students (Graham & Harris, 2019), which is an element of skill building that is not characteristic of the Choice condition. Rather, providing students with choices in the classroom at the elementary level has been shown to increase their enjoyment with the task (Mouratidis et al., 2011), but an indication of its effect on writing performance has yet to be empirically supported.

Impact of Student Interest

A novel examination included in the current study was to measure the impact that student interest in the story starter had on writing productivity. It was hypothesized that writing productivity would be predicted by higher levels of interest in the story starter. This hypothesis was confirmed by results of a simple linear regression that indicated a significant positive relationship between student interest and writing productivity. Regardless of the writing condition they were randomly assigned to, the more that students were interested in the story starter the more words they would write. This result may also motivate future research to consider choosing writing prompts that are of interest for students, specifically with regard to students participating in a Choice condition. Given that students assigned to the Choice condition in the present study did not increase their writing productivity, an investigation on the writing outcomes of

students who are able to choose between writing prompts that are of high interest to them may prove beneficial for students and educators. Overall, considering that an investigation regarding the degree to which interest with a story starter impacts students' motivation to write had yet to be conducted, these findings provide evidence that teachers should consider student interest in writing topics when providing classroom instruction to support improving writing productivity.

Student Intervention Acceptability

Student intervention acceptability was measured as part of the current study. Data on intervention acceptability was not collected from teachers. Previous studies investigating the effects of PF on students' writing productivity reported that students' perceptions of the acceptability of the intervention were moderate (Koenig et al., 2016; Truckenmiller et al., 2014). That is, on a 5-point Likert-type response system, mean ratings greater than 4.25 are considered highly acceptable, and ratings between 3.00 and 4.25 are considered moderately acceptable. It was hypothesized that the findings of this study would replicate the moderate results reported by Truckenmiller et al. (2014) and Koenig et al. (2016). This hypothesis was supported, as all participants across both conditions rated the interventions as moderate ($M = 3.84$, $SD = 1.10$). On average, students participating in the PF condition rated the intervention as more acceptable than students participating in the Choice condition. This result indicates that when teachers consider writing interventions to implement class-wide, students may prefer a PF intervention to a greater extent, and outcomes may be more satisfying for educators in

comparison to a Choice intervention. However, statistical results were not significantly different between the two conditions.

Limitations

There are several limitations that need to be addressed despite this study's evidence supporting the use of the PF intervention to increase the writing productivity of fourth-grade students. First, replicating this study with a larger sample of students across multiple grade levels over a longer time would further examine the effectiveness of the PF intervention when compared to a Choice intervention. A larger sample of students from multiple schools or districts would provide more evidence to support the generalizability of the writing intervention. Due to a small number of participants that were enrolled in the same elementary school, the degree to which the study's findings can be generalized to a national elementary school population is limited. Second, implementing the interventions across multiple grade levels would provide further examination of the effects of each condition. Isolating the effects of the interventions to one grade level may not be indicative of how students at different stages of their writing development would respond to similar interventions. A third limitation includes time constraints. Measuring writing growth over a longer period of time than 3 weeks may provide more information about the sustainability of the intervention's effectiveness and how the rigor of typical academic instruction impacts student motivation, engagement, and productivity. Fourth, some participants may not have needed academic intervention given that all eligible students were included in the study. Participants may have already been performing up to their potential and, therefore, had limited room to increase their

writing productivity. And, lastly, a fifth limitation is not having a control group. Comparing the outcomes of the PF and Choice conditions to a control group would provide further examination of the effect of the interventions.

Practice Implications and Future Directions

The results of the current study extend the empirical literature on the effects of Performance Feedback (PF) as an effective writing fluency intervention and provide further support for the use of PF in general education classrooms. Teachers, school psychologists, and problem-solving teams can confidently utilize a supplemental, class-wide intervention such as PF that increases the writing productivity for all students prior to formally implementing a more intensive intervention to remediate writing problems for individual students. Supplementing writing instruction with PF can be incorporated as a consistent routine for teachers. Utilizing PF weekly, for example, may be beneficial for students to monitor their progress, set goals, and motivate them to increase their writing fluency throughout the academic year. Individual students who exhibit writing difficulties or who are at-risk for writing difficulties may also benefit from writing interventions such as PF and/or Choice. Educators may match these writing interventions to the difficulties a student exhibits with their writing skills. Whether it's difficulty with writing production or the motivation to write, PF and Choice may both provide beneficial outcomes for individual students and educators alike given their evidence-base. In addition, considering student interest when constructing and implementing a writing intervention may prove beneficial in improving the writing outcomes for students. School-based practitioners should also be mindful of the efficient and feasible implementation of PF,

making it an ideal supplement to writing instruction. In contrast to the positive implications of PF, another implication of this study is that it did not support the use of Choice as a class-wide writing intervention at the elementary level.

Future studies should consider investigating the impact of student interest using a larger number of participants across multiple grade levels over a longer period of time to provide further understanding of the role it plays in motivating students to write more productively. Also, rather than eliminating Choice altogether as a potential writing intervention based on the results of the current study, future studies may examine the effects of combining Choice and PF in comparison to an isolated PF condition at the class-wide level. In addition, future research can investigate the effect of providing PF on other variables related to writing and supplement PF research with measures of writing quality, such as CWS. Using additional writing measures in future research may enhance the understanding of the quality of student writing to a greater degree than TWW alone. Future studies should also investigate generalization to other basic skills (e.g., mathematics, spelling, reading) to enhance understanding within the research on instruction and interventions aimed at strengthening fluency skills. Lastly, future research may want to target students that are performing behind their peers and are in more need of academic intervention.

Conclusion

Results indicate that PF was a more effective intervention than Choice in increasing the writing productivity of 4th-grade elementary students in a class-wide setting. This is important because the study supports and extends existing research

regarding the effectiveness of PF as a writing fluency intervention. In addition, Choice did not increase the writing productivity of the students in this study, indicating that it may not be a sufficient intervention to increase elementary students' writing productivity at the class-wide level. This study provides preliminary evidence that students may be more productive in their writing when they are more interested in the writing topic. Future research should aim to replicate these findings across a broader group of participants and grade levels to provide further understanding of the role topic interest has in motivating students to write more productively.

References

Aitken, A. A., Graham, S., & McNeish, D. (2022). The effects of choice versus preference on writing and the mediating role of perceived competence. *Journal of Educational Psychology*, *114*(8), 1844-1865. https://doi.org/10.1037/edu0000765

Alves-Wold, A., Rigmor Walgermo, B., McTigue, E., & Henning Uppstad, P. (2023). Assessing writing motivation: A systematic review of K-5 students' self-reports. *Educational Psychology Review*, *35*(24). https://doi.org/10.1007/s10648-023-09732-6

Anderson, J. R. (1993). *Rules of the mind*. Lawrence Erlbaum Associates, Inc. https://doi.org/10.4324/9781315806938

Applebee, A. (1984). Writing and reasoning. *Review of Educational Research*, *54*(4), 577-596. https://doi.org/10.3102/00346543054004577

Arra, C. T., & Bahr, M. W. (2005). Teachers' and students' preferences for mathematics interventions: Implications for teacher acceptability in consultation. *Journal of Educational & Psychological Consultation*, *16*, 157-174. https://doi.org/10.1207/s1532768xjepc1603_2

Bangert-Drowns, R. L., Hurley, M. M., & Wilkinson, B. (2004). The effects of school-based writing-to-learn interventions on academic achievement: A meta-analyses. *Review of Educational Research*, *74*(1), 29-58. https://doi.org/10.3102/00346543074001029

Barrett, C. A., Truckenmiller, A. J., & Eckert, T. L. (2020). Performance feedback during writing intervention: A cost-effectiveness analysis. *School Psychology*, *35*(3), 193-200. https://doi.org/10.1037/spq0000356

Barry, A. L., Nielsen, D. C., Glasnapp, D. R., Poggio, J. P., & Sundbye, N. (1997). Large scale performance assessment in writing: Effects of student and teacher choice variables. *Contemporary Education*, *69*(1), 20-26. https://search.proquest.com/openview/f6617d535d7c4281ba34fa06f62dac5c/1?pq-origsite=gscholar&cbl=41688

Beaton, A. (2010). Student choice in writing: Reflections on one teacher's inner struggle to relinquish control. *Schools: Studies in Education*, *7*(1), 111-121. https://doi.org/10.1086/651296

Bramlett, R. K., Murphy, J. J., Johnson, J., Wallingsford, L., & Hall, J. D. (2002). Contemporary practices in school psychology: A national survey of roles and referral problems. *Psychology in the Schools*, *39*(3), 327-335. https://doi.org/10.1002/pits.10022

Brindle, M., Graham, S., Harris, K. R., & Hebert, M. (2016). Third and fourth grade teacher's classroom practices in writing: A national survey. *Reading & Writing*, *29*(5), 929-954. https://doi.org/10.1007/s11145-015-9604-x

Burns, M. K., Karich, A. C., Maki, K. E., Anderson, A., Pulles, S. M., Ittner, A., McComas, J. J., & Helman, L. (2015). Identifying classwide problems in reading with screening data. *Journal of Evidence-Based Practices for Schools*, *14*(2), 186-204.

https://www.researchgate.net/publication/277691971_Identifying_Classwide_Pro
blems_in_Reading_With_Screening_Data

Calkins, L. (2020). *Teaching writing*. Heinemann.

https://www.heinemann.com/products/e11812.aspx

Carver, C. S., & Scheier, M. F. (1982). Control theory: A useful conceptual framework
for personality-social, clinical, and health psychology. *Psychological Bulletin*,
92(1), 111-135. https://doi.org/10.1037/0033-2909.92.1.111

Codding, R. S., Shiyko, M., Russo, M., Birch, S., Fanning, E., & Jaspen, D. (2007).
Comparing mathematics interventions: Does initial level of fluency predict
intervention effectiveness? *Journal of School Psychology*, *45*(6), 603-617.
https://doi.org/10.1016/j.jsp.2007.06.005

Coker, D. (2006). Impact of first-grade factors on the growth and outcomes of urban
schoolchildren's primary-grade writing. *Journal of Educational Psychology*,
98(3), 471-488. https://doi.org/10.1037/0022-0663.98.3.471

Council of Chief State School Officers & National Governors Association. (2010, June
2). *Common Core State Standards for English Language Arts & Literacy in
History/Social Studies, Science, and Technical Subjects*. Authors.
https://learning.ccsso.org/wp-content/uploads/2022/11/ADA-Compliant-ELA-
Standards.pdf

Datchuk, S. M., & Hier, B. O. (2019). Fluency practice: Techniques for building
automaticity in foundational knowledge and skills. *TEACHING Exceptional
Children*, *51*(6), 424-435. https://doi.org/10.1177/0040059919847213

Deci, E. L. (1980). *The psychology of self-determination*. Lexington Books.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuit: Human needs
and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227-268.
https://doi.org/10.1207/S15327965PLI1104_01

Deno, S. L., Mirkin, P. K., & Marston, D. (1980, January). *Relationships among simple
measures of written expression and performance on standardized achievement
tests* (Report No. 22). University of Minnesota.
http://files.eric.ed.gov/fulltext/ED197507.pdf

Eckert, T. L., Codding, R. M., Truckenmiller, A. J., & Rheinheimer, J. L. (2009).
Improving children's fluency in reading, mathematics, spelling, and writing: A
review of evidence-based academic interventions. In A. Akin-Little, S. G. Little,
M. A. Bray, & T. J. Kehle (Eds.), *Behavioral interventions in schools: Evidence-
based positive strategies* (pp. 111-124). American Psychological Association.

Eckert, T. L., Hier, B. O., Hamsho, N. F., & Malandrino, R. D. (2017). Assessing
children's perceptions of academic interventions: The Kids Intervention Profile.
School Psychology Quarterly, *32*(2), 268-281.
https://doi.org/10.1037/spq0000200

Eckert, T. L., Lovett, B. J., Rosenthal, B. D., Jiao, J., Ricci, L. J., & Truckenmiller, A. J.
(2006). Class-Wide instructional feedback: Improving children's academic skill
development. In S. V. Randall (Ed.), *Learning disabilities: New research* (pp.
271-285). Nova Science Publishers.

Ennis, R. P., Jolivette, K., & Losinski, M. (2017). The effects of writing choice prompt on the written narratives of students with emotional and behavioral disorders: A case study of an abandoned single-case design. *Behavioral Disorders*, *42*(4), 185-195. https://doi.org/10.1177/0198742917709471

Espin, C., Shin, J., Deno, S., Skare, S., Robinson, S., & Benner, B. (2000). Identifying indicators of written expression proficiency for middle school students. *The Journal of Special Education*, *34*(3), 140-153. https://doi.org/10.1177/002246690003400303

Finlayson, K., & McCrudden, M. T. (2020). Teacher-implemented writing instruction for elementary students: A literature review. *Reading & Writing Quarterly*, *36*(1), 1-18. https://doi.org/10.1080/10573569.2019.1604278

Flowerday, T., & Schraw, G. (2000). Teacher beliefs about instructional choice: A phenomenological study. *Journal of Educational Psychology*, *92*(4), 634-645. https://doi.og/10.1037/0022-0663.92.4.634

Flowerday, T., Schraw, G., & Stevens, J. (2004). The role of choice and interest in reader engagement. *Journal of Experimental Education*, *72*(2), 93-114. https://doi.org/10.3200/JEXE.72.2.93-114.

Forster, K. I. (1999). The microgenesis of priming effects in lexical access. *Brain and Language*, *68*(1-2), 5-15. https://doi.org/10.1006/brln.1999.2078

Furey, W. M., Marcotte, A. M., Hintze, J. M., & Shackett, C. M. (2016). Concurrent validity and classification accuracy of curriculum-based measurement for written

expression. *School Psychology Quarterly*, *31*(3), 369-382.

https://doi.org/10.1037/spq0000138

Gabrielson, S., Gordon, B., & Engelhard, G., Jr. (1995). The effects of task choice on the

quality of writing obtained in a statewide assessment. *Applied Measurement in*

Education, *8*(4), 273-290. https://doi.org/10.1207/s15324818ame0804_1

Gersten, R., Chard, D. J., Jayanthi, M., Baker, S. K., Morphy, P., & Flojo, J. (2009).

Mathematics instruction for students with learning disabilities: A meta-analysis of

instructional components. *Review of Educational Research*, *79*(3), 1202-1242.

https://doi.org/10.3102/0034654309334431

Gilbert, J., & Graham, S. (2010). Teaching writing to elementary students in grades 4-6:

A national survey. *The Elementary School Journal*, *110*(4), 494-518.

https://doi.org/10.1086/651193

Gillespie Rouse, A. (2019). Instruction for students with special needs. In S. Graham, C.

A. MacArthur, M. Herbert (Eds.), *Best practices in writing instruction* (3rd ed.,

pp. 361-384). The Guilford Press. https://www.guilford.com/books/Best-

Practices-in-Writing-Instruction/Graham-MacArthur-Hebert/9781462537969

Graham, S. (2006). Strategy instruction and the teaching of writing. In C. A. MacArthur,

S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 187-207).

The Guilford Press.

https://www.researchgate.net/publication/271429299_Handbook_of_Writing_Res

earch_1st_Ed

Graham, S. (2012). Writing. In P. A. Alexander & P. H. Winne (Eds.), *Handbook of educational psychology* (2nd ed., pp. 457-478). Routledge. https://doi.org/10.4324/9780203874790

Graham, S., Bollinger, A., Booth Olson, C., D'Aoust, C., MacArthur, C., McCutchen, D., & Olinghouse, N. (2012). *Teaching elementary school students to be effective writers: A practice guide* (NCEE 2012-4058). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. http://ies.ed.gov/ncee/wwc/publications_reviews.aspx#pubsearch

Graham, S., & Harris, K. R. (2019). Evidence-based practices in writing. In S. Graham, C. A. MacArthur, & M. Herbert (Eds.), *Best practices in writing instruction* (3rd ed., pp. 3-28). The Guilford Press. https://www.guilford.com/books/Best-Practices-in-Writing-Instruction/Graham-MacArthur-Hebert/9781462537969

Graham, S., & Perin, D. (2007a). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology*, *99*(3), 445-476. https://doi.org/10.1037/0022-0663.99.3.445

Graham, S., & Perin, D. (2007b). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools – A report to Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education. https://media.carnegie.org/filer_public/3c/f5/3cf58727-34f4-4140-a014-723a00ac56f7/ccny_report_2007_writing.pdf

Griffiths, A. J., VanDerHeyden, A. M., Parsons, L., & Burns, M. (2006). Practical

    applications of response-to-intervention research. *Assessment for Effective*

    Intervention, *32*(1), 50-57. https://doi.org/10.1177/15345084060320010701

Hamel, F. (2017). *Choice and agency in the writing workshop: Developing engaged*

    writers, grades 4-6. Teachers College Press. https://www.tcpress.com/choice-and-

    agency-in-the-writing-workshop-9780807758557

Harris, K., Graham, S., & Mason, L. (2002). POW plus TREE equals powerful opinion

    essays. *Teaching Exceptional Children*, *34*(5), 74-77.

    https://doi.org/10.1177/004005990203400513

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational*

    Research, *77*(1), 81-112. https://doi.org/10.3102/003465430298487

Hawkins, R. O., Musti-Rao, S., Hale, A. D., McGuire, S., & Hailey, J. (2010). Examining

    listening previewing as a classwide strategy to promote reading comprehension

    and vocabulary. *Psychology in the Schools*, *47*(9), 903-916.

    https://doi.org/10.1002/pits.20513

Hayes, J. R. (2011). Kinds of knowledge-telling: Modeling early writing development.

    Journal of Writing Research, *3*(2), 73-92. https://doi.org/10.17239/jowr-

    2011.03.02.1

Heubusch, J. D., & Lloyd, J. W. (1998). Corrective feedback in oral reading. *Journal of*

    Behavioral Education, *8*(1), 63-79. https://doi.org/10.1023/a:1022864707734

Hidi, S., & McLaren, J. (1990). *The effect of topic and theme interestingness on the production of school expositions* (H. Mandl, E. DeCorte, N. Bennet, & H. F. Friedrich (Eds.). Pergamon.

Hier, B. O., & Eckert, T. L. (2014). Evaluating elementary-aged students' abilities to generalize and maintain fluency gains of a performance feedback writing intervention. *School Psychology Quarterly*, *29*(4), 488-502. https://doi.org/10.1037/spq0000040

Hillman, B. W. (1970). The effect of knowledge of results and token reinforcement on the arithmetic achievement of elementary school children. *The Arithmetic Teacher*, *17*(8), 676-682. https://www.jstor.org/stable/41187605

Hosp, M. K., Hosp, J. L., & Howell, K. W. (2016). *The ABC's of CBM: A practical guide to curriculum-based measurement* (2nd ed.). The Guilford Press. https://www.guilford.com/books/The-ABCs-of-CBM/Hosp-Hosp-Howell/9781462524662

Hudson, R. F., Lane, H. B., & Mercer, C. D. (2005). Writing prompts: The role of various priming conditions on the compositional fluency of developing writers. *Reading & Writing*, *18*(6), 473-495. https://doi.org/10.1007/s11145-004-7042-2

Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology*, *80*(4), 437-447. https://doi.org/10.1037//0022-0663.80.4.437

Juliebo, M. F., & Edwards, J. M. (1988). The effect of topic choice on narrative writing: Grades 1-6. *Canadian Journal of Education*, *13*(3), 437-440. https://doi.org/10.2307/1494922

Kazdin, A. E. (2008). Evidence-based treatment and practice: New opportunities to bridge clinical research and practice, enhance the knowledge base, and improve patient care. *American Psychologist*, *63*(3), 146-159. https://doi.org/10.1037/0003-066X.63.3.146

Kellogg, R. T. (2008). Training writing skills: A cognitive developmental perspective. *Journal of Writing Research*, *1*(1), 1-26. https://doi.org/10.17239/jowr-2008.01.01.1

Kim, Y.-S., Al Otaiba, S., Wanzek, J., & Gatlin, B. (2015). Towards an understanding of dimensions, predictors, and gender gap in written composition. *Journal of Educational Psychology*, *107*(1), 79-95. https://doi.org/10.1037/a0037210

Kim, B., & Kim, H. (2016). Korean college EFL learners' task motivation in written language production. *International Education Studies*, *9*(2), 42-50. https://doi.org/10.5539/ies.v9n2p42

Koenig, E. A., Eckert, T. L., & Hier, B. O. (2016). Using performance feedback and goal setting to improve elementary students' writing fluency: A randomized controlled trial. *School Psychology Review*, *45*(3), 275-295. https://doi.org/10.17105/SPR45-3.275-295

Kohn, A. (1993). Choices for children: Why and how to let children decide. *Phi Delta Kappan*, *75*(1), 8-20.

https://link.gale.com/apps/doc/A13271755/GPS?u=mnamsumank&sid=bookmark
-GPS&xid=2eece686

Kohn, A. (1998). *What to look for in a classroom…and other essays.* Jossey-Bass
Publishers.

Koster, M., Tribushinina, E., De Jong, P. F., & Van den Bergh, B. (2015). Teaching
children to write: A meta-analysis of writing intervention research. *Journal of
Writing Research*, *7*(2), 249-274. https://doi.org/10.17239/jowr-2015.07.02.02

Kratochwill, T. R., & Shernoff, E. S. (2004). Evidence-based practice: Promoting
evidence-based interventions in school psychology. *School Psychology Review*,
33(1), 34-48. https://doi.org/10.1080/02796015.2004.12086229

Losinski, M., Maag, J. W., Katsiyannis, A., & Ennis, R. P. (2014). Examining the effects
of quality of interventions based on the assessment of contextual variables: A
meta-analysis. *Exceptional Children*, *80*(4), 407-422.
https://doi.org/10.1177/0014402914527243

Malecki, C. (2014). Best practices in written language assessment and intervention. In P.
L. Harrison & A. Thomas (Eds.), *Best practices in school psychology: Data-
based and collaborative decision making* (pp. 187-202). National Association of
School Psychologists. https://www.nasponline.org/books-and-
products/products/books/titles/best-practices-in-school-psychology-data-based-
and-collaborative-decision-making

Malecki, C. K., & Jewell, J. (2003). Developmental, gender, and practical considerations in scoring curriculum-based measurement writing probes. *Psychology in the Schools*, *40*(4), 379-390. https://doi.org/10.1002/pits.10096

Marston, D., & Deno, S. L. (1981, January). *The reliability of simple, direct measures of written expression*. (Report No. 50). University of Minnesota. http://files.eric.ed.gov/fulltext/ED212663.pdf

Maurer, M., & Poblete, L. (2005, February 7). *As many as 40 percent of American public high school graduates are unprepared for college and work* [Press release]. https://www.achieve.org/files/pollrelease.pdf

Mautone, J. A., DuPaul, G. J., Jitendra, A. K., Tresco, K. E., Junod, R. V., & Volpe, R. J. (2009). The relationship between treatment integrity and acceptability of reading interventions for children with attention-deficit/hyperactivity disorder. *Psychology in the Schools*, *46*(10), 919-931. https://doi.org/10.1002/pits.20434

McLaughlin, T. F., & Malaby, J. E. (1972). Intrinsic reinforces in a classroom token economy. *Journal of Applied Behavior Analysis*, *5*(3), 263-270. https://doi.org/10.1901/jaba.1972.5-263

Morgan, P. L., & Sideridis, G. D. (2006). Contrasting the effectiveness of fluency interventions for students with or at risk for learning disabilities: A multilevel random coefficient modeling meta-analysis. *Learning Disabilities Research and Practice*, *21*(4), 191-210. https://doi.org/10.1111/j.1540-5826.2006.00218.x

Mouratidis, A., Vansteenkiste, M., Sideridis, G., & Lens, W. (2011). Vitality and interest-enjoyment as a function of class-to-class variation in need-supportive teaching

and pupils' autonomous motivation. *Journal of Educational Psychology*, *103*(2), 353-366. https://doi.org/10.1037/a0022773

National Assessment Governing Board. (2010, September). *Writing Framework for the 2011 National Assessment of Educational Progress*. https://nces.ed.gov/transfer.asp?location=www.nagb.org/publications/frameworks /writing-2011.pdf

National Association of School Psychologists. (2020). *Considerations for writing interventions upon the return to school* [handout]. Author. https://www.nasponline.org/resources-and-publications/resources-and-podcasts/covid-19-resource-center/return-to-school/considerations-for-assessment-instruction-and-intervention-of-writing-skills-upon-the-return-to-school

National Center for Education Statistics. (2012). *The Nation's Report Card: Writing 2011* (NCES 2012-470). Institute of Education Sciences, U.S. Department of Education, Washington, D.C. https://nces.ed.gov/nationsreportcard/pdf/main2011/2012470.pdf

Nelson, N. W., & Van Meter, A. M. (2007). Measuring written language ability in narrative samples. *Reading & Writing Quarterly*, *23*(3), 287-309. https://doi.org/10.1080/10573560701277807

Newell, K. M. (1974). Knowledge of results and motor learning. *Journal of Motor Behavior*, *6*(4), 235-244. https://psycnet.apa.org/record/1975-22305-001

Paas, F., van Merrienboer, J. J. G., & van Gog, T. A. J. M. (2012). Designing instruction for the contemporary learning landscape. In K. R. Harris, S. Graham, & T. Urdan (Eds.), *APA educational psychology handbook: Vol. 3. Application to learning and teaching* (pp. 335-358). American Psychological Association. https://www.apa.org/pubs/books/4311503

Patall, E. A., Cooper, H., & Wynn, S. R. (2010). The effectiveness and relative importance of choice in the classroom. *Journal of Educational Psychology*, *102*(4), 896-915. https://doi.org/10.1037/a0019545

Pearson Education (2015). *AIMSweb national norms technical documentation*. Author. http://www.aimsweb.com

Renninger, K. A. (1992). *Individual interest and development: Implications for theory and practice* (K. A. Renninger, S. Hidi, & A. Krapp, Eds.). Erlbaum.

Reynolds, P. L., & Symons, S. (2001). Motivational variables and children's text search. *Journal of Educational Psychology*, *93*(1), 14-22. https://doi.org/10.1037/0022-0663.93.1.14

Richardson, J. T. E. (2011). Eta squared and partial eta squared as measures of effect size in educational research. *Educational Research Review*, *6*(2), 135-147. https://doi.org/10.1016/j.edurev.2010.12.001

Roitsch, J., Gumpert, M., Springle, A., & Raymer, A. M. (2021). Writing instruction for students with learning disabilities: Quality appraisal of systematic reviews and meta-analyses. *Reading & Writing Quarterly*, *37*(1), 32-44. https://doi.org/10.1080/10573569.2019.1708221

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of

    intrinsic motivation, social development, and well-being. *American Psychologist*,

    55(1), 68-78. https://doi.org/10.1037/0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2019). Brick by brick: The origins, development, and future

    of self-determination theory. In A. J. Elliot (Ed.), *Advances in motivation science:*

    Vol. 6. (pp. 111-156). Elsevier. https://doi.org/10.1016/bs.adms.2019.01.001

Saddler, B., Moran, S., Graham, S., & Harris, K. (2004). Preventing writing difficulties:

    The effects of planning strategy instruction on the writing performance of

    struggling writers. *Exceptionality*, *12*(1), 3-17.

    https://doi.org/10.1207/s15327035ex1201_2

Salahu-Din, D., Persky, H., and Miller, J. (2008). *The Nation's Report Card: Writing*

    2007 (NCES 2008-468). National Center for Education Statistics, Institute of

    Education Sciences, U.S. Department of Education, Washington D.C.

    http://files.eric.ed.gov/fulltext/ED500814.pdf

Saudargas, R. W., Madsen, C. H., & Scott, J. W. (1977). Differential effects of fixed and

    variable time feedback on production rates of elementary school children. *Journal*

    of Applied Behavior Analysis, *10*(4), 673-678.

    https://doi.org/10.1901/jaba.1977.10-673

Schiefele, U., Krapp, A., & Winteler. A. (1992). *Interest as a predictor of academic*

    achievement: A meta-analysis of research (K. A. Renninger, S. Hidi, & A. Krapp,

    Eds.). Erlbaum.

Schrank, F. A., Mather, N., & McGrew, K. S. (2014). *Woodcock-Johnson IV Tests of Achievement (WJ IV ACH)*. https://riversideinsights.com/woodcock_johnson_iv

Schunk, D. H. (1996). Goal and self-evaluative influences during children's cognitive skill learning. *American Educational Research Journal*, *33*(2), 359-382. https://doi.org/10.3102/00028312033002359

Seifert, C., Panahon, C. J., Engle, K., Dhanowa, S., & Hunstad, A. (2023, February 7-10). *Investigating choice as a writing intervention for fifth-grade students* [Poster presentation]. National Association of School Psychologists Annual Convention, Denver, Colorado.

Shapiro, E. S. (2011). *Academic skill problems: Direct assessment and intervention* (4th ed.). The Guilford Press. https://www.guilford.com/books/Academic-Skills-Problems/Edward-Shapiro/9781606239605

Singley, M. K., & Anderson, J. R. (1989). *The transfer of cognitive skill*. Harvard University Press. https://www.hup.harvard.edu/catalog.php?isbn=9780674903401

Stipek, D. J. (1996). Motivation and instruction. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 85-113). Routledge. https://doi.org/10.4324/9780203053874

Tadatada, A. (2011). *Growth rates of curriculum-based measurement-written expression at the elementary school level* [Master's thesis, Western Kentucky University]. Masters Theses & Specialist Projects. https://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=2043&context=theses

Thorndike, E. L. (1898). Animal intelligence: An experimental study of the associative

processes in animals. *Psychological Monographs*, *2*(4), i-109.

https://doi.org/10.1037/h0092987

Thorndike, E. L. (1911). *Animal intelligence: Experimental studies*. Macmillan Press.

https://doi.org/10.5962/bhl.title.55072

Thorndike, E. L. (1931). *Human learning*. The Century Co.

https://doi.org/10.1037/11243-000

Trap, J. J., Milner-Davis, P., Joseph, S., & Cooper, J. O. (1978). The effects of feedback

and consequences on transitional cursive letter formation. *Journal of Applied

Behavior Analysis*, *11*(3), 381-393. https://doi.org/10.1901/jaba.1978.11-381

Troia, G. A., Shen, M., & Brandon, D. L. (2019). Multidimensional levels of language

writing measures in grades four to six. *Written Communication*, *36*(2), 231-266.

https://doi.org/10.1177/0741088318819473

Trowbridge, D. E., & Carson, H. (1932). An experimental study of Thorndike's theory of

learning. *Journal of General Psychology*, *7*, 245-260.

https://doi.org/10.1080/00221309.1932.9918465

Truckenmiller, A. J., Eckert, T. L., Codding, R. S., & Petscher, Y. (2014). Evaluating the

impact of feedback on elementary aged students' fluency growth in written

expression: A randomized controlled trial. *Journal of School Psychology*, *52*(6),

531-548. https://doi.org/10.1016/j.jsp.2014.09.001

Urdan, T., & Schoenfelder, E. (2006). Classroom effects on student motivation: Goal

    structures, social relationships, and competence beliefs. *Journal of School*

    Psychology, *44*(5), 331-349. https://doi.org/10.1016/j.jsp.2006.04.003

Van Houten, R. (1979). The performance feedback system: Generalization of effects

    across time. *Child Behavior Therapy*, *1*(3), 219-236.

    https://doi.org/10.1300/J473v01n03_01

Van Houten, R. (1980). *Learning through feedback: A systematic approach for*

    improving academic performance. Human Sciences Press.

Van Houten, R., Hill, S., & Parsons, M. (1975). An analysis of a performance feedback

    system: The effects of timing and feedback, public posting, and praise upon

    academic performance and peer interaction. *Journal of Applied Behavior*

    Analysis, *8*(4), 449-457. https://doi.org/10.1901/jaba.1975.8-449

Van Houten, R., Morrison, E., Jarvis, R., & McDonald, M. (1974). The effects of explicit

    timing and feedback on compositional response rate in elementary school

    children. *Journal of Applied Behavior Analysis*, *7*(4), 547-555.

    https://doi.org/10.1901/jaba.1974.7-547

VanDerHeyden, A. M., & Codding, R. S. (2015). Practical effects of classwide

    mathematics intervention. *School Psychology Review*, *44*(2), 169-190.

    https://doi.org/10.17105/spr-13-0087.1

Videen, J., Deno, S. L., & Marston, D. (1982). *Correct word sequences: A valid indicator*

    of proficiency in written expression (Report No. 84). University of Minnesota.

    https://eric.ed.gov/?id=ED225112

Table 1

Means, Standard Deviations, and ANCOVA Statistics

Measure	PF Condition		Choice Condition		$F(1,35)$	η^2
	M	*SD*	*M*	*SD*		
Pre-Test	28.3	16.4	34.5	13.5	11.78**	.16
Post-Test	47.0	16.4	30.6	12.6	19.62***	.27

Note: ** $p < .01$. *** $p < .001$.

Table 2

Regression Results Using TWW as the Criterion

Predictor	b	b 95% CI [LL, UL]	beta	beta 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	r	Fit
(Intercept)	24.90**	[18.35, 31.38]						
Interest	3.36**	[1.87, 4.92]	0.22	[0.12, 0.31]	.05	[.01, .10]	.22**	R^2 = .048**
								95% CI[.01,.10]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. *sr^2* represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
* indicates *p* < .05. ** indicates *p* < .01.

Table 3

Student Intervention Acceptability Assessment

	PF Condition		Choice Condition	
	M	*SD*	*M*	*SD*
Q1: How much do you like writing stories with us each week?	4.05	1.10	3.61	1.09
Q2: How much do you like being told what to write about?	2.90	0.91	2.89	1.23
Q3: Were there times when you didn't want to write stories with us?	1.75	0.91	2.17	0.92
Q4: Were there any times when you wished you could work more on writing stories with us?	3.60	1.27	2.78	1.22
Q5: How much do you like being told how many words you wrote?	4.16	1.12	--	--
Q6: How much do you think it helped when you were told how many words you wrote?	3.95	1.22	--	--
Q7: Do you think your writing has improved?	3.70	0.86	3.31	0.87
Q8: Do you think your writing has gotten worse?	1.35	0.99	1.63	0.62

Note: Answers were based on a Likert-type scale with 1 = *not at all*, and 5 = *very, very much*.

Figure 1

TWW as a Function of Student Interest
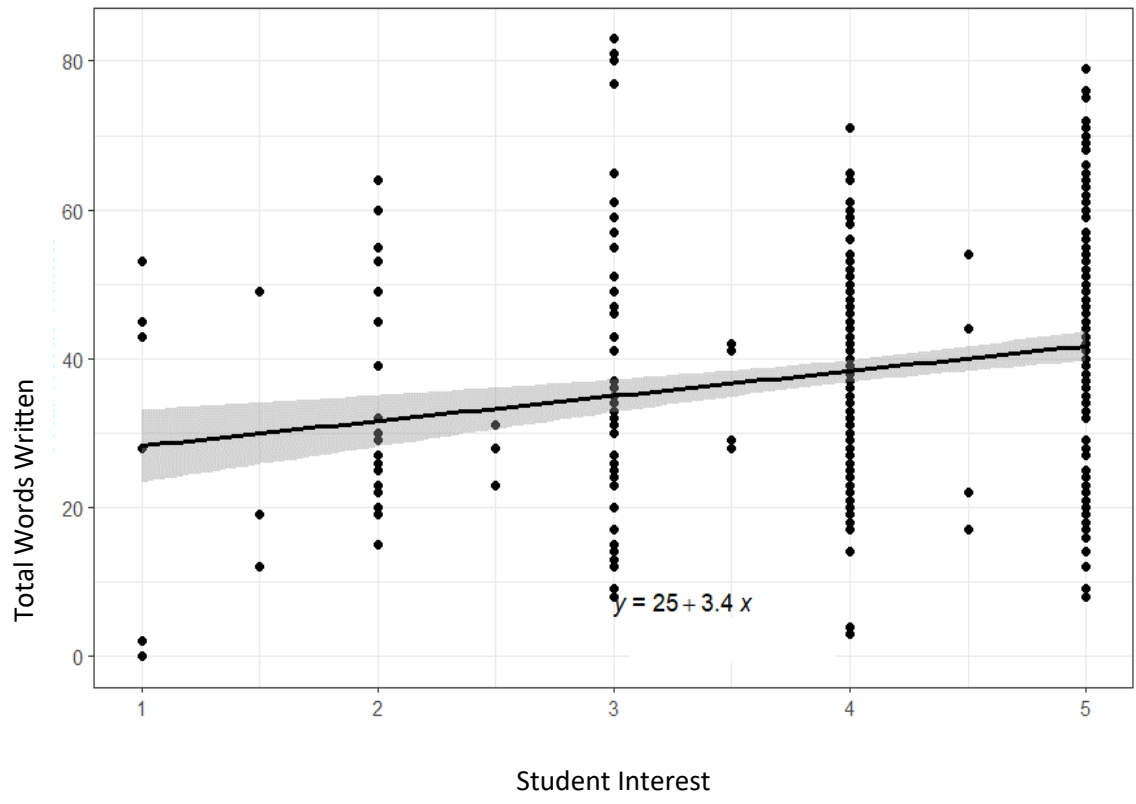
Student Interest

Note: Each dot represents a participants' level of interest in the writing prompt across all sessions. Results of a simple linear regression indicated a significant positive relationship between student interest and writing productivity, with a 3.36-unit (+/- 0.76) increase in writing productivity for every unit increase in student interest.

Appendix A

Parental Consent Form

Please print CLEARLY

Name of parent or guardian: _____

I am the legal guardian of_____. I consent for him or her to participate in a research project that compares choice and performance feedback writing interventions. Carlos J. Panahon, Ph.D. from the Psychology Department at Minnesota State University, Mankato is the director of the project and Collin M. Seifert, a School Psychology Doctoral Candidate, is the student investigator. Participation in this study includes the following for my child and me:

1) To read and sign this consent form.

2) That my child will participate in three separate writing conditions—choice, performance feedback, and no condition—to compare their effectiveness in improving his or her writing fluency over the course of 4 weeks. Each session will last for approximately 10 minutes for four days per week.

Procedures

My child will be asked to write as many words as they can for 3 minutes after being given a story starter by the researchers. An example of a story starter is "It was a hot, dry day and I had been walking for hours without food or water when…" If you have any questions about this research study, I will contact Dr. Carlos J. Panahon at 507-389-2815 or carlos.panahon@mnsu.edu and/or Collin M. Seifert at collin.seifert@mnsu.edu. If I have any questions about my rights and for research-related injuries, I will contact the Administrator of the Institutional Review Board at 507-389-1242.

Confidentiality

All information obtained in this project will be kept confidential by the staff of this research project. All information will be stored in a locked file cabinet at Minnesota State University, Mankato. It can be viewed only by authorized research staff members (Dr. Carlos J. Panahon, Collin M. Seifert). No information about my child will be released and no names will be recorded other than on the consent forms.

Risks and Benefits

The risks of participating in this study are no more than those in normal daily life. The benefits may be increased self-esteem as a result of improved writing performance. I can request a copy of the study's results (but not my child's results), which would be mailed to me after the end of the study. Participating in this study may help the researchers determine writing interventions that will increase writing fluency outcomes of elementary students.

Right to Refuse Participation

Participation in this project is voluntary and my child and I have the right to stop at any time. If I would like my child to no longer participate in the research, I will contact the researchers at the e-mail addresses or phone numbers given above. My child can choose to skip any questions he or she does not want to answer. My child can stop participating by saying he or she does not want to be in the study any more. My decision whether to participate will not affect my relationship with Minnesota State University, Mankato, and refusal to participate will involve no penalty or loss of benefits.

My signature indicates that I am at least 18 years of age and have received a copy of the consent form to keep.

Print your name:

Signed:

Date:

Minnesota State University, Mankato IRBNet Id#: 2087706

Date of Minnesota State University, Mankato IRB approval: 10/6/23

Appendix B

Child Assent Form

You are being asked to be part of a research project that will help adults better understand elementary children's writing. You will be asked to write as many words as you can after being given a story starter. Your participation is voluntary and you can decline participation or stop participating at any time.

My name is Collin Seifert and I am a School Psychology Doctoral Candidate from Minnesota State University, Mankato and I will be giving you writing packets with a story starter. The teachers and other students in your school will never know how you respond to the story starter. I will collect your writing and then put them together with other children's writing. College teachers and other teachers will use all of the information to help elementary school children become better writers.

If you decide that you do not want to finish your writing, you will tell me or your teacher. You do not have to do the writing. If you do not want to write, you will tell me or your teacher.

These stories are not a part of a test and there are no wrong answers. You will not get anything for writing. After we are finished with the writing, I will thank you and take you back to class.

Minnesota State University, Mankato IRBNet Id#: 2087706

Date of Minnesota State University, Mankato IRB approval: 10/6/23

Appendix C

Pre- and Post-Test CBM-WE

Written Expression Prompt

Name:

The best part about school is…

The best part about school is…

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

How much did you like writing about today's story?

I disliked it a lot	I disliked it	I neither liked or disliked it	I liked it a little	I liked it a lot

Procedural Script for **PRE- AND POST-TEST CONDITIONS**

Classroom: _____ Date: _____ Session #: _____

Researcher 1: _____ Researcher 2: _____

Integrity: Y   N   Reliability: Y   N

Materials Needed: Writing packets, cell phone (for timer), pencil(s) for students

(Please check [X] each box as you complete each step)

❑ The researcher distributes the writing packets to the students with the stop sign facing up.

❑ Say: *"Please write your name at the top of your paper."*

❑ Set the cell phone timer to 1 minute.

❑ Say: *"I want you to write a story. I am going to read a sentence to you first and then I want you to write a short story about what happens. You will have 1 minute to think about the story you will write and then 3 minutes to write it. Do your best work. If you don't know how to spell a word you should guess. Do you have any questions?"*

❑ Say: *"For the next minute think about …* **The best part about school is…"**

❑ Start the cell phone timer.

❑ At the end of 1 minute say: *"Okay, turn your paper over and start writing"*.

❑ Set the cell phone timer to 3 minutes and start it. If a student stops writing before the 3-minute timing period has ended, encourage them to continue writing.

❑ At the end of 3 minutes say: *"Stop writing."* Do not provide any reinforcement or additional prompting.

❑ Say: *"At the bottom of the page please tell me how much you liked writing about today's story, then put your pencil down."*

❑ Collect the writing packets from the students.

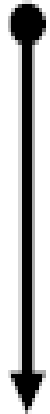Completed ____ out of 11 steps

Appendix D

Performance Feedback Condition CBM-WE

Name:

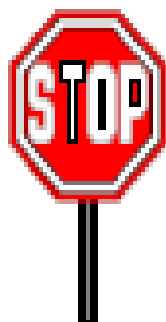Here is how you are doing in your writing:
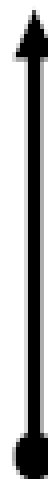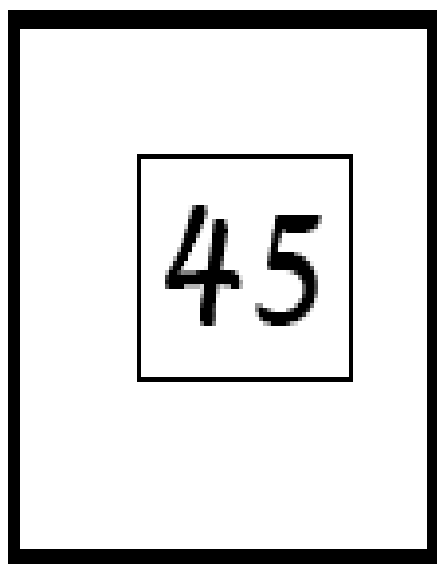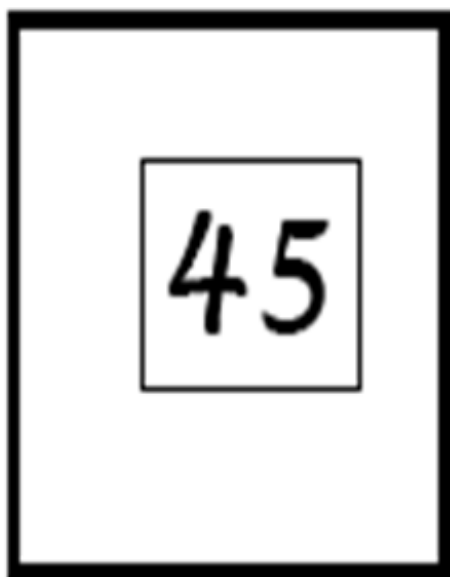
15

STOP

Name:

Here is how you are doing in your writing:

45

STOP

Name:

Here is how you are doing in your writing:

45 =

STOP

Written Expression Probe

Name:

I looked out my window and to my surprise…

I looked out my window and to my surprise…

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

How much did you like writing about today's story?

I disliked it a lot	I disliked it	I neither liked or disliked it	I liked it a little	I liked it a lot

Procedural Script for **FEEDBACK CONDITION**

Classroom: _____ Date: _____ Session #: _____

Researcher 1: _____ Researcher 2: _____

Integrity: Y   N   Reliability: Y   N

Materials Needed: Writing packets, cell phone (for timer), pencil(s) for students

(*Please check [X] each box as you complete each step*)

❑   The researcher distributes the writing packets to the students.

❑   Set the cell phone timer to 1 minute.

❑   Say: ***"In the box on the left you will see a number. The number tells you how many words you wrote in your story the last time."***

❑   Say: ***"On the next page I want you to write a story. I am going to read a sentence to you first and then I want you to write a short story about what happens. You will have 1 minute to think about the story you will write and then 3 minutes to write it. Do your best work. If you don't know how to spell a word you should guess. Do you have any questions?"***

❑   Say: ***"For the next minute think about:*** <u>**I looked out my window and to my surprise…**</u>***"***

❑   Start the cell phone timer.

❑   At the end of 1 minute say: ***"Okay, turn your paper over and start writing"***.

❑   Set the cell phone timer to 3 minutes and start it. If a student stops writing before the 3-minute timing period has ended, encourage them to continue writing.

❑   At the end of 3 minutes say: ***"Stop writing."*** Do not provide any reinforcement or additional prompting.

❑   Say: ***"At the bottom of the page please tell me how much you liked writing about today's story, then put your pencil down."***

❑   Collect the writing packets from the students.

Completed _____ out of 11 steps

Appendix E

Choice Condition CBM-WE

Writing Prompt #1

Name:

My favorite game to play during recess is…

My favorite game to play during recess is…

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

How much did you like writing about today's story?

I disliked it a lot	I disliked it	I neither liked or disliked it	I liked it a little	I liked it a lot

Writing Prompt #2

Name:

The dog was barking so loud that…

The dog was barking so loud that…

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

How much did you like writing about today's story?

I disliked it a lot	I disliked it	I neither liked or disliked it	I liked it a little	I liked it a lot

Procedural Script for **CHOICE CONDITION**

Classroom: _____ Date: _____ Session #: _____

Researcher 1: _____ Researcher 2: _____

Integrity: Y   N   Reliability: Y   N

(Please check [X] each box as you complete each step)

❑ The researcher distributes the writing packets to the students with the stop sign facing up.

❑ Set the cell phone timer to 1 minute.

❑ Say: ***"I want you to write a story. Today you will have a choice of which story you want to write. I am going to read two sentences to you first, and then I want you to choose which story you want to write about."***

❑ Say: ***"Please look at the first page. The sentence on this page says:*** <u>**My favorite game to play during recess is…"**</u>. Give the students 5 seconds to think about the first story starter. Next, say: ***"Now, look at the second page. The sentence on this page says:*** <u>**The dog was barking so loud that…"**</u>. Give the students 5 seconds to think about the second story starter.

❑ Say: ***"Please choose which story you would like to write today."***

❑ After the students have chosen a story, say: ***"Please place the story you didn't choose under your chair, then write your name at the top of the page of the story you chose."***

❑ Say: ***"It is time to write your story. I am going to re-read the sentences then I want you to write a story about what happens in the story you chose. You will have 1 minute to think about the story you will write and then 3 minutes to write it. Do your best work. If you don't know how to spell a word, you should guess. Do you have any questions?"***

❑ Say: ***"For the next minute think about…*** <u>**My favorite game to play during recess is…**</u> *or* <u>**The dog was barking so loud that…"**</u>

❑ Start the cell phone timer. The researcher picks up the packets that the students did not choose during this minute.

- ❑ At the end of 1 minute say: ***"Okay, turn your paper over and start writing"***.

- ❑ Set the cell phone timer to 3 minutes and start it. If a student stops writing before the 3-minute timing period has ended, encourage them to continue writing.

- ❑ At the end of 3 minutes say: ***"Stop writing."*** Do not provide any reinforcement or additional prompting.

- ❑ Say: ***"At the bottom of the page please tell me how much you liked writing about today's story, then put your pencil down."***

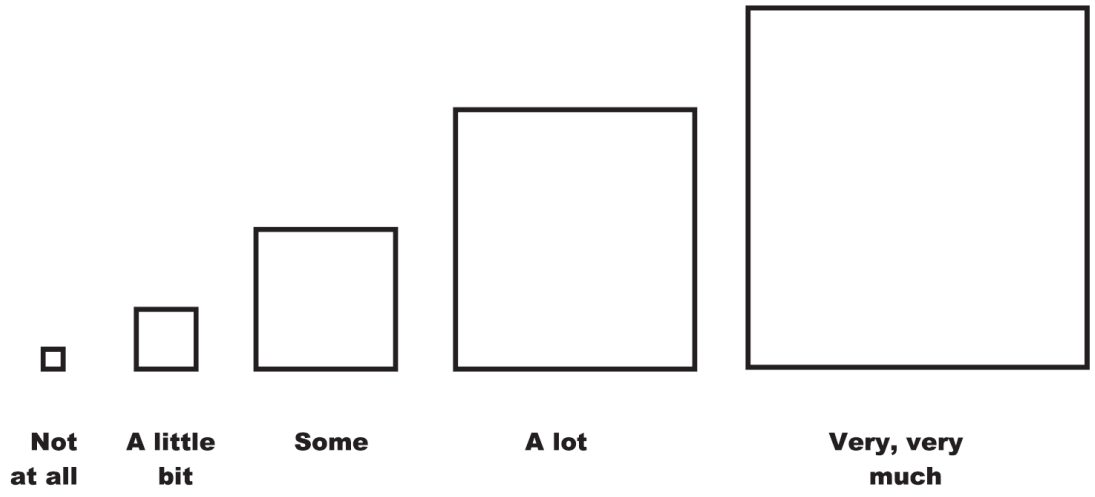- ❑ Collect the writing packets from the students.

Completed ___ out of 14 steps

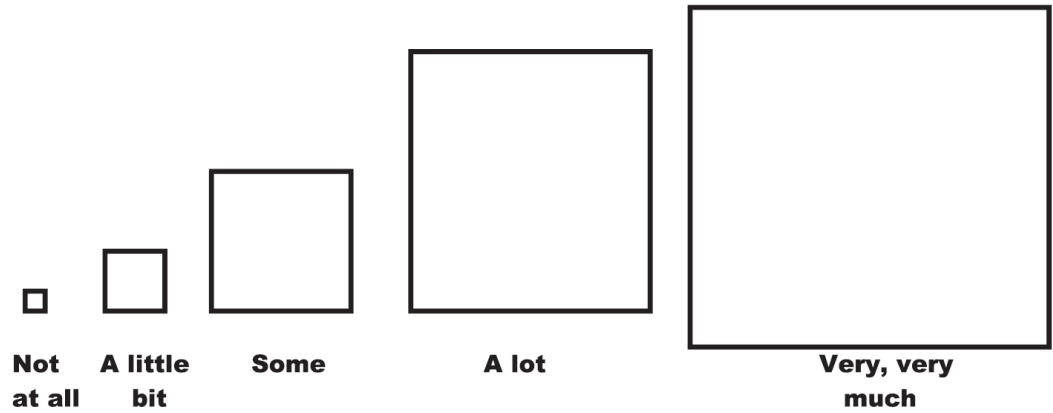**Appendix F**

The Kids Intervention Profile (KIP)

<u>**Question #1**</u>

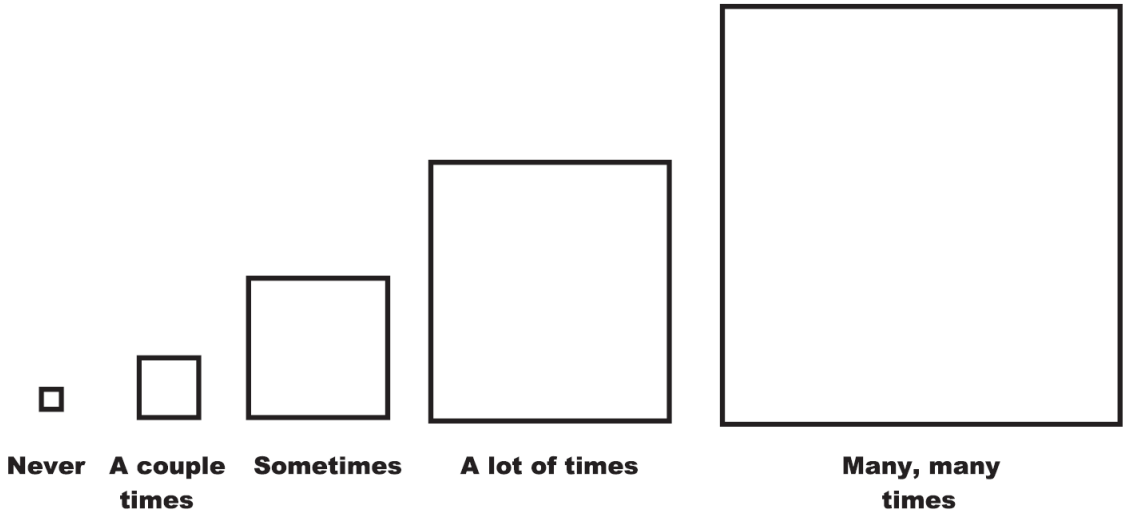**How much do you like writing stories with us each week?**

Not at all	A little bit	Some	A lot	Very, very much

<u>**Question #2**</u>

How much do you like being told what to write about?

Not at all	A little bit	Some	A lot	Very, very much

Question #3
Were there times when you didn't want to write stories with us?

Never   **A couple times**   **Sometimes**   **A lot of times**   **Many, many times**

Question #4
Were there any times when you wished you could work more on writing stories with us?

Never   **A couple times**   **Sometimes**   **A lot of times**   **Many, many times**
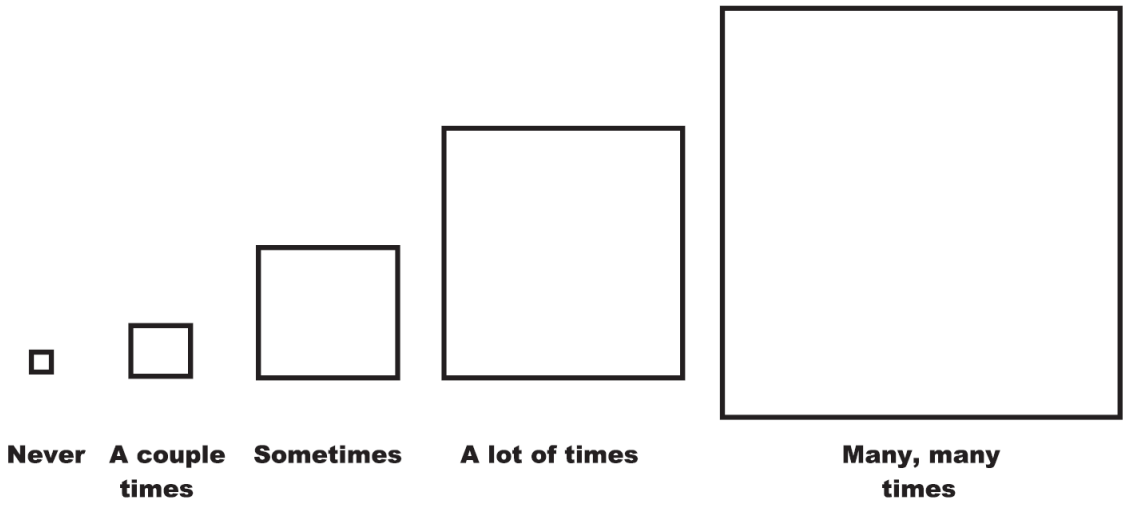
Question #5

How much do you like being told how many words you wrote?

| Not at all | A little bit | Some | A lot | Very, very much |
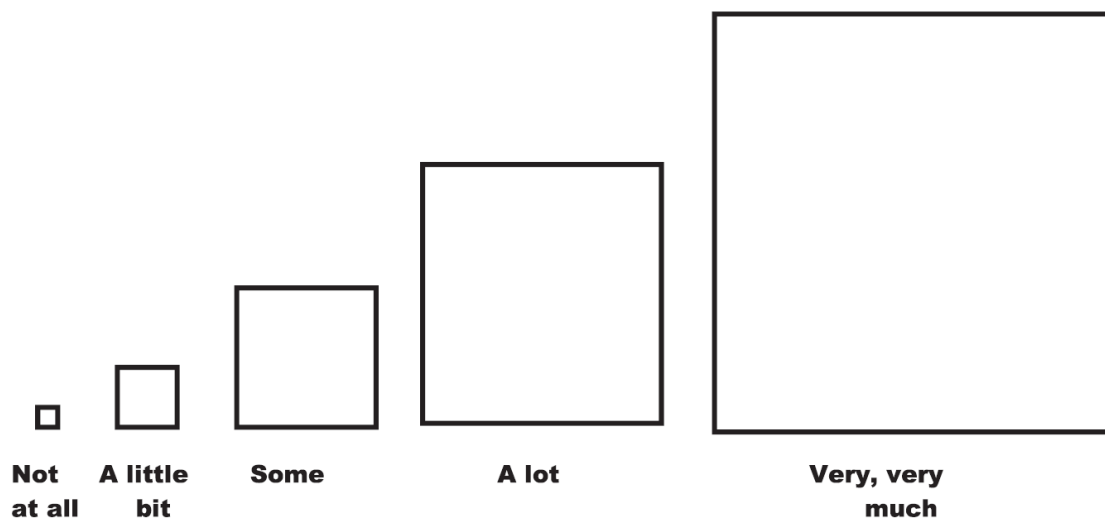
Question #6

How much do you think it helped you when you were told how many words you wrote?

| Not at all | A little bit | Some | A lot | Very, very much |
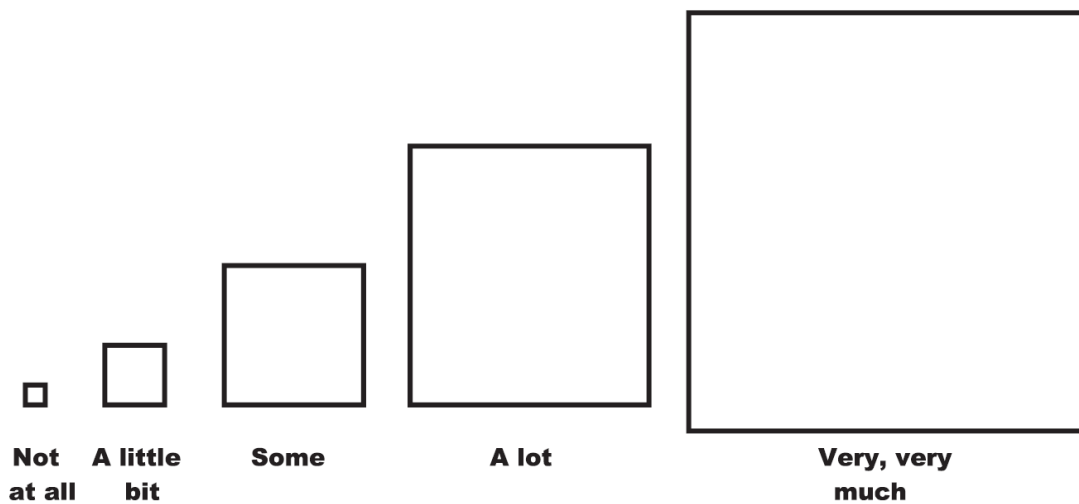
Question #7
Do you think your writing has improved?

Not at all   **A little bit**   **Some**   **A lot**   **Very, very much**
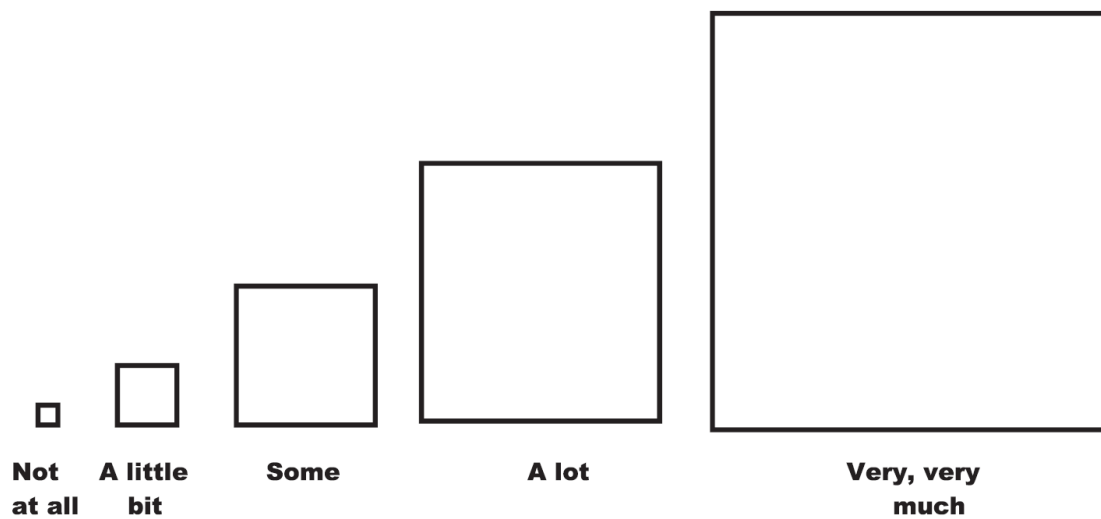
Question #8

Do you think your writing has gotten worse?

Not at all   **A little bit**   **Some**   **A lot**   **Very, very much**