Examining the Impact of Student Choice on Student Performance on Curriculum-Based Measurement of Written Expression

Victoria Gail VanMaaren

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Examining the Impact of Student Choice on Student Performance on Curriculum-Based Measurement of Written Expression

A Dissertation Presented for the
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Victoria Gail VanMaaren
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Abstract

Although writing is deemed a critical skill for students to develop, only one-quarter of American students meet minimum grade-level expectations for written expression on national assessments (National Center for Educational Statistics, 2012). It is important to have high quality writing assessment screeners to identify students who are having difficulty acquiring writing skills. While many educators use curriculum-based measurement for identification, specific modifications to written expression administration have not been examined. The purpose of the proposed study was to investigate choice as an alteration on traditional administration procedures. Students in grades three through five (n = 196) were exposed to both Choice and No Choice conditions. In the former, students selected from two prompts, while in the latter, a prompt was chosen for students. Data were analyzed to determine whether choice improved writing production and quality across gender and grade. Additionally, students completed a social validity scale to determine student perception of choice of writing task.

Results indicated statistically significant performance gains related to Total Words Written and Correct Writing Sequences, with students producing an average of 2.8 more words and 3 more Correct Writing Sequences when given a choice of writing topic. Males and females did not significantly differ in their response to choice of topic (i.e., performance gains for males and females with regard to Total Words Written and Correct Writing Sequences were not significantly different). However, females outperformed their male counterparts to a statistically significant level in choice and no choice conditions across both production and quality variables. Results indicated significant performance increases (Total Words Written and Correct Writing Sequences) for third and fifth grade students when given a choice, while choice had a negative impact on both writing production and quality for fourth grade students. Of the 196 participants,
92.9% indicated a preference for having a choice of writing topic. Applied implications of the current study, limitations, and areas for future research are discussed.
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CHAPTER I

Review of the Literature

Writing is regarded as a critical skill for students to develop. Similar to reading and arithmetic, the ability to write permeates both daily living and professional communication. Writing is used in a variety of different methods, including functional (writing down directions to a location) and creative (composing a letter to a friend) communication (Graham, 2008). While writing begins in early elementary school, it also is a necessary skill in higher education and in many job settings (Graham, 2008). Therefore, it is important to foster proficient writers throughout differing educational levels to ensure both educational and professional success.

Despite the need for proficient writers, national data do not point to a positive trend in writing skill development. In fact, poor writing skills are seemingly being compounded over grade levels – fourth graders who exhibited poor writing skills then become eighth graders with poor writing skills (Graham, McKeown, Kiuhara, & Harris, 2012). In addition, students who do not develop satisfactory writing skills are at increased risk for drop-out and school failure (Berninger et al., 2006). The National Assessment of Educational Progress (NAEP) assesses national performance across a variety of academic areas and produces national report cards detailing areas of strength as well as areas for improvement. NAEP provides writing assessment data for fourth, eighth, and twelfth grade students across the nation. Grade-level expectations must be met for students to be deemed proficient on the assessment. During the last assessment period, 27% of eighth graders and 24% of twelfth graders were writing proficiently, as measured by grade level expectations (National Center for Education Statistics, 2012). Furthermore, 20% of eighth graders and 21% of twelfth graders were performing “below basic,” indicating little to no mastery of grade level standards for writing. This is not a new trend, as 2003 data illustrated a
similar pattern. In 2003, 28% of fourth graders, 31% of eighth graders, and 23% of twelfth graders were writing at the proficient level (National Center for Education Statistics, 2003).

This lack of proficiency in writing is impacting students’ college and workplace success as well. 38% of students who immediately enter the workforce after high school graduation are determined to not have the skills to write for their job (Achieve, Inc., 2005). Even students who attend college are reported to be ill-prepared for higher education and workplace demands. When university faculty were surveyed about their students’ writing skills, they reported that almost half of high school graduates were not capable of writing up to university expectations (Achieve, Inc., 2005). Sanoff (2006) reported 44% of college professors believed high school students were not prepared for college level writing, while only 10% of high school teachers shared the same opinion. These data indicate a clear disconnect between high school teacher and college professor perceptions on the necessary prerequisite writing skills for being successful in college. Furthermore, the National Commission on Writing (2004) noted that American companies annually spend over $3.1 billion to remediate the writing deficits of their employees. Kellogg and Whiteford (2009) maintain the position that the goal of education is to adequately prepare students for the workplace, and companies should not have to remediate writing instruction students should have received throughout their educational career.

Data suggest that students of all levels do not have the necessary writing skills to perform up to the standards of their workplace or school. This lack of proficiency is echoed in student perceptions about the difficulty of writing and their own writing abilities. According to Bandura (1997), humans develop self-efficacy from four sources, with the most influential source being our previous experience and performance with a task, also known as mastery performance. Pajares, Johnson, and Usher (2007) determined Bandura’s hypothesis held true with elementary,
middle, and high school students’ self-efficacy surrounding writing. Students with higher perceived mastery experience in writing reported higher writing self-efficacy (Pajares, Johnson, & Usher, 2007). The highest proportion of variance in writing self-efficacy is accounted for by previous experiences of success in writing, yet only 27% of eighth graders and 24% of twelfth graders were experiencing success in writing as measured by grade-level expectations in 2011 (National Center for Education Statistics, 2012). This discrepancy leads to students having a pervasive sense of inability when it comes to writing. This sense of inability then impacts behavior, with students perceiving writing as an impossible task and avoiding writing practice (Graham & Harris, 2010). It is apparent this cycle of struggling writers must be remediated to ensure educational and workplace success.

Given these data, the National Commission on Writing stated in 2003 that writing was the “neglected r” (p. 9). This assertion was made while comparing writing education and assessment to reading and arithmetic education and assessment. Both reading and arithmetic education have received significantly more attention than writing education (Applebee & Langer, 2006). Applebee and Langer detail the emphasis placed on writing education from a theoretical perspective, but note the lack of intervention research as well as the lack of practice students receive in writing during school (2006). The National Commission on Writing advocated for writing instruction to be integrated in all subject areas. However, the task was left to state governments to determine standards for writing instruction and performance (National Commission on Writing, 2003). With the passage of No Child Left Behind in 2001, there was a renewed interest in teaching reading as a way to achieve educational goals, though writing was not mentioned in the standards (Gansle, VanDerHeyden, Noell, Resetar & Williams, 2006). While overall literacy is agreed to be a combination of a student’s reading and writing skills,
Graham (2008) contrasts the amount of funding placed into reading research and education with the amount of interest and funding achieved by writing education. Policymakers responded with the Common Core State Standards as an attempt to remediate national deficits in education across all subject areas.

**Common Core State Standards**

In 2009, state leaders began the process of drafting the Common Core State Standards (CCSS) to ensure graduating high school students are prepared to enter college or the workplace (“Common Core State Standards,” 2017). This process was initiated by a lack of continuity across states – previously, each state had their own benchmark for proficiency in specific subject areas that varied widely across the country. In addition, developers noted differences between the educational standards in top-performing countries and the educational standards in the United States (“Common Core State Standards,” 2017). The Common Core State Standards represent an effort to maintain a competitive global position in education as well as to streamline state standards. Although adoption of the Common Core Standards is optional, as of 2015, 42 states have adopted and are now implementing the standards (“Common Core State Standards,” 2017). Common Core State Standards outline expectations for K-12 education that meet the college and career readiness standards drafted by the committee. These expectations currently exist for Mathematics and English Language Arts for grades K-12. Writing, History, Science and Technical Subjects are subsumed under English Language Arts (“Common Core State Standards,” 2017).

The public reaction to the Common Core State Standards has been polarizing, with some critiquing what they deem “one size fits all” education (Kohn, 2010; Mathis, 2010; Noddings, 2010). As noted by Mathis (2010), there is currently no longitudinal research on the effects of
implementing the Common Core State Standards, as most states are implementing the standards in phases and have not had sufficient time to collect long-term data. Although reactions have been mixed and there is little data to support or refute the standards, the Common Core State Standards represent a step towards accountability for writing instruction (Costa, Hooper, McBee, Anderson & Yerby, 2012). The Common Core State Standards set benchmark expectations for students’ writing skills in a variety of genres, including narrative, argument/opinion, and informative/explanatory (“Common Core State Standards,” 2017). Expectations also are set for planning, revising, and editing written work, as well as integrating research into writing at developmentally appropriate levels (“Common Core State Standards,” 2017). If students master grade-level tasks in grades K-12, it is expected they will exit high school prepared for writing tasks in college and in the workplace.

The Common Core State Standards present skills students should develop at each grade level, but does not provide a curriculum for acquiring those skills. It is left to each state to determine how to integrate the CCSS into classrooms (“Common Core State Standards,” 2017). Despite the Common Core State Standards movement viewing writing as an invaluable skill that should be explicitly taught, there remains a disconnect between evidence-based writing instruction and assessment procedures and the emphasis placed on writing by the CCSS (Costa, Hooper, McBee, Anderson & Yerby, 2012). Therefore, it is crucial to research and establish procedures to assist students in mastering grade-level writing skills. One system in place to remediate skills deficits and identify struggling students is Response to Intervention.

**Response to Intervention**

According to the National Center for Learning Disabilities, 5% of school-age children and 50% of students with disabilities are identified as having a specific learning disability
Response to Intervention (RTI) became a potential method for identifying students with specific learning disabilities starting with the reauthorization of the Individuals with Disabilities Education Act (IDEA) in 2004 (Shapiro, 2011). Following this legislation, school systems are able to monitor a students’ progress while being exposed to evidence-based interventions (Shapiro, 2011). If a student fails to make progress through multi-leveled and tiered interventions, they may be identified as having a learning disability. The two main purposes of RTI are to implement prevention and intervention services that do not wait for a child to fail, and to improve upon previous processes for identifying students (Fletcher & Vaughn, 2009; D. Fuchs & Deschler, 2007; Shapiro, 2011).

Response to Intervention models, while implemented in varying methods across school districts, share commonalities. All models involve screening all children for both academic and behavior problems (Vaughn & Fuchs, 2003). This encompasses Tier I, which involves general education instruction for all students using evidence-based teaching practices (Shapiro, 2011). It is estimated that the preventive strategy of providing evidence-based instruction to all students will be sufficient to help 80% of students grasp grade-level concepts (Vaughn & Fuchs, 2003). Students who are not successful in general instruction, as identified by curriculum-based assessment performance, may be moved into Tier II instruction. In Tier II, students’ deficits are specifically targeted in small-group, evidence-based instruction (Shapiro, 2011). In most RTI systems, these interventions are delivered in groups of three-five students for approximately 20-40 minutes daily (Vaughn & Fuchs, 2003). While in Tier II, students are frequently administered progress monitoring probes to determine whether progress is being made toward remediating a students’ individual deficits (Shapiro, 2011). Approximately 15% of students require Tier II intervention services (Vaughn & Fuchs, 2003). If progress is made in Tier II, a student may be
moved back into Tier I where they receive general instruction. However, if a student fails to make progress, a case may be made to move the student to Tier III. Tier III involves further intensity in interventions – a student may be pulled individually to work with an intervention specialist, and the frequency at which progress monitoring data are collected increases accordingly (Shapiro, 2011). Reports estimate that 5% of students will remain in Tier III interventions (Vaughn & Fuchs, 2003).

Response to Intervention is a comprehensive system to both prevent students from failing to attain grade-level concepts and to identify students who may have learning disabilities. Although this system is capable of identifying students with learning disabilities in reading, math, and written expression, RTI has not given writing the attention it needs thus far (Saddler & Asaro-Saddler, 2013). According to Berninger et al. (2008), the research into RTI thus far has focused on validating reading interventions and instructional practices and there is a paucity of research on validating writing instruction and interventions within an RTI system, specifically in early intervention and screening. Saddler and Asaro-Saddler (2013) noted the lack of utilization of RTI for writing and proposed a framework to integrate writing into an RTI system. Even with these calls for examination of RTI for writing, a model has not been developed or investigated.

In their model, Saddler and Asaro-Saddler assert that students writing development is directly related to exposure to quality instruction (Graham, Harris, & Larsen, 2001). Thus, they are operating from the standpoint that the nation’s deficit in writing is not due to an inherent deficit, but an instructional deficit, and advocate RTI as a solution to this deficit (Saddler & Asaro-Saddler, 2013). Given the lack of research into effective writing instruction, it is not certain which instructional strategies would be beneficial for Tier I, or what interventions would be beneficial in Tiers II and III (De La Paz, Espin, & McMaster, 2010). The focus of this study is
not on interventions so we will review the research in assessment. Several options are presented as options for screening measures. These include accurate-legible letter writing (Berninger, 2006) as measured by the Process Assessment of the Learner (Berninger, 2001), holistic scoring where writing samples are assigned a score based on holistic impression (McMaster & Espin, 2007), and curriculum-based measurements (Hasbrouck, Woldbeck, Ihnot, & Parker, 1999). Currently, one of the most common ways student progress is monitored in schools is through curriculum-based measurement procedures.

**Curriculum-Based Measurement**

The movement towards using curriculum-based measurement probes (CBM) to evaluate student progress began with the use of a “data-based program modification” system (Deno & Mirkin, 1977). Under this system, probes were taken directly from the curriculum and administered to students to determine progress toward goals (Shapiro, 2011). In a CBM framework, students are administered probes in reading, math, and writing that assess a broad range of the curriculum in each subject area (Fuchs & Deno, 1991). Each probe is an alternate form of equal difficulty – for example, all probes in reading fluency measure word reading speed, but not all probes contain the same words (Deno, Fuchs, Marston, & Shin, 2001).

Curriculum-based measurement systems rely on traditional reliability and validity measures and also incorporate aspects of behavioral assessment, including fixed time recording and displaying data in a time-series graph (Deno, Fuchs, Marston, & Shin, 2001). It is argued that graphing data is a necessary component if a CBM system is to inform treatment effects for each student.

When looking specifically at curriculum-based measurement for written expression, AIMSweb offers the only norm-referenced assessment. In developing national norms, AIMSweb utilizes data entered by users. Current norms were developed in the 2009-2010 school year, and
included a sample of 230,465 students on the reading measure and 80,174 students on the math measure. For written expression, data were compiled from 2007-2010 to obtain adequate sample size, and 10,194 students were represented (Pearson, 2012). Even when expanding the sample size by two school years, the number of students with data for CBM in written expression is one-eighth of the number with math data and represents less than 5% of students with data for CBM in reading. This finding harkens back to the claim of the National Commission on Writing in 2003 that writing was the “neglected r” in reading, arithmetic, and writing (p. 9). To make accurate decisions about a students’ writing ability, adequate norms must be available.

Powell-Smith and Shinn (2004) authored the AIMSweb training workbook for the administration and scoring of curriculum-based measurement in written expression. The authors provide standardized procedures for typical administration. In typical administration, students are provided with one story starter at the top of a lined piece of paper and are given one minute to plan their story and three minutes to write their story, with a reminder of the prompt after 90 seconds of writing time (Powell-Smith & Shinn, 2004). Writing samples are then scored on various measures, including Total Words Written or Correct Writing Sequences (Powell-Smith & Shinn, 2004). On top of the lack of adequate norms, no critical evaluation of typical written expression curriculum-based measurement administration procedures has been conducted to date. Therefore, it is unknown if variations on administration procedures may enhance writing production.

**Choice**

One variation that may positively influence writing production and performance is allowing students to choose the story starter. In standard administration procedures, students are given one story starter; if a student cannot think of a story to write or is not fond of the story
starter, their performance will perhaps be artificially lower than their abilities. However, if students are given several options of story starters to select from and students are able to find a story starter they are interested in writing about, their performance may be a more accurate representation of their current abilities. In addition, students who are able to select their preferred story starter may enjoy writing more than students who are unable to select their prompt.

Research on choice varies significantly on the type of choice and the population being given a choice, with both positive and negative findings.

**Impact on behavior.** Research investigating the impact of choice on student behavior has largely focused on student engagement and disruptive behavior in students with disabilities (Cannella, O’Reilly & Lancioni, 2005). Studies have demonstrated that giving an individual, either a student or an adult with disabilities, the choice of a task has been effective at reducing disruptive behavior and increasing task completion (Dunlap et al., 1994; Parsons, Reid, Reynolds, & Bumgarner, 1990; Romaniuk & Miltenberger, 2001; Shogren, Faggella-Luby, Bae, & Wehmeyer, 2004). Specifically, Cosden, Gannon, and Haring (1995) investigated both task completion and task accuracy for middle school students with severe disabilities. Researchers used an alternating treatment design to determine the relative effect of student versus teacher choice on both task and reward. Results indicated task completion and task accuracy was highest for all students when students chose both task and reward as opposed to teachers. This result held constant even when teachers selected the students’ preferred task and reward (Cosden, Gannon, & Haring, 1995). This finding was partially corroborated by Vaughn and Horner (1997), who observed problem behavior of four students with severe disabilities. After identifying high and low preference activities, researchers examined the effect of student versus teacher choice.
Results indicated that problem behavior rates were lower when students chose lower preference activities and higher when teachers chose lower preference activities (Vaughn & Horner, 1997).

Research also has demonstrated positive effects of choice with other populations. For example, Tasky, Rudrud, Schulze and Rapp (2008) demonstrated increases in task engagement for adults diagnosed with traumatic brain injury when participants were able to choose a task to work on. The research on choice with students with emotional and behavior disorders has yielded similar results. Jolivette, Stichter, and McCormick (2002) advocate for the use of choice with students with emotional and behavior disorders as a way to increase predictability in the environment and increase appropriate behaviors. In 2001, Jolivette, Wehby, Canale, and Massey illustrated positive effects of choice making in the classroom on the behavior of two of three students in a special education classroom diagnosed with emotional and behavior disorders.

Despite several studies reporting the positive impact choice making can have on behavior, studies also have demonstrated a lack of effectiveness. Cole, Davenport, Bambara, and Ager (1997) compared the differential effects of choice and assignment of tasks for three students with intellectual impairments and behavior difficulties. Results indicated introducing choice into the environment failed to produce the desired effects, and various idiosyncratic variables accounted for change in behavior (Cole et al., 1997). While most of the research in this area has focused on students with disabilities, Waldron-Soler, Martella, Marchand-Martella, and Ebey (2000) investigated the impact of reinforcement choice following task completion for preschool students with and without developmental disabilities. No differences were noted between conditions when students were presented with a choice between three less preferred rewards (as determined by a preference assessment) or when students were assigned a less
desirable reward (Waldron-Soler et al., 2000). It was hypothesized that when students are given a choice and do not prefer any of the presented options, choice does not impact behavior.

Given the mixed findings regarding the impact of choice on behavior, it is important to determine the underlying mechanism causing changes in behavior. Morgan (2006) advocates that the combination of a preference assessment and the ability to make a choice leads to the most positive behavioral outcomes. In addition, the effects of choice on reducing disruptive behavior is dependent on the maintaining consequence; choice-making differentially impacts students whose problem behavior is maintained by escape versus attention (Morgan, 2006). Thus, while it has been demonstrated that choice can have a positive impact on behavior for specific students, further research is warranted to determine the mechanism by which choice is effective.

**Impact on academics.** Similar to research regarding the effects of choice on behavior, there are mixed reviews of the impact choice has on academic tasks. While research regarding behavior has primarily focused on students and adults with disabilities, the research investigating choice and academic tasks has had a broader scope. Some researchers advocate strongly for the use of choice with academic tasks in the classroom while others demonstrate neutral or negative effects.

Multiple studies have demonstrated positive effects of introducing choice in the classroom. Patall, Cooper and Wynn (2010) examined the impact choice of homework assignment had on both motivation and academic performance on unit tests. Participants involved 207 high school students in grades 9-12. Students were randomized to a choice or no choice condition for the first homework assignment and were then switched; each student received both conditions. Following homework completion, researchers administered a social validity survey to participants. Results indicated higher intrinsic motivation to complete
homework, higher perceived competence, and higher unit test grades when students were given a choice of homework assignment. In addition, homework completion rates were significantly higher for students with a choice than for students without (Patall, Cooper, & Wynn, 2010). These results corroborate findings from Grolnick and Ryan (1987), who found higher interest levels and rote learning in fifth-grade students who had control over their learning experience. Researchers hypothesized that as students felt more autonomous and in control of their experiences, their learning and interest levels increased. Both studies (Grolnick & Ryan, 1987; Patall, Cooper, & Wynn, 2010) illustrate the importance of autonomy and intrinsic motivation for learning. Choice is a method to increase student perception of autonomy and control and thereby increase intrinsic motivation for learning.

Within the context of online learning, few systems allow students to have control or preference over their own education. Ostrow and Heffernan (2015) demonstrated positive effects of choice of feedback type in an online learning system. Participants, which included 82 middle school students, were either able to choose the type of feedback they received (i.e., text feedback or a video with the necessary content) or were assigned a feedback condition. Results indicated students who were able to choose feedback type performed significantly better on outcome measures than students who were unable to choose, even if the students never accessed the chosen feedback. This further illustrates the positive effects of autonomy, control, and choice on the academic performance of students.

Conversely, some researchers advocate that incorporating choice into the classroom does not positively impact academic performance. Flowerday, Schraw, and Stevens (2004) claim the positive effects of choice in the classroom are due more to interest in what was chosen than the act of having a choice itself. In addition, the researchers state that situational interest in topic is
more predictive of engagement and performance. Choice did not have an impact on undergraduate student performance on a multiple choice test taken following passage reading and exhibited little to no impact on attitude or task engagement (Flowerday, Schraw, & Stevens, 2004). These results corroborate findings by Killu, Clare, and Im (1999). Researchers examined academic behavior with three middle-school students with disabilities. In comparing choice and no choice in combination with preferred and non-preferred activities, results indicated a higher level of task engagement when students were working with their preferred tasks (as measured by a preference assessment) regardless of whether they were able to choose the activity or the activity was assigned (Killu, Clare, & Im, 1999). These findings illustrate the limitations of using choice in the classroom and may indicate that preference and situational interest are more critical to promoting academic achievement than choice itself.

Skinner, Wallace, and Neddenriep (2002) examined the potential educational applications of using choice in the classroom and provided practical applications for teachers. However, the authors caution against overusing choice as a classroom intervention. While the ability to make a choice can be effective, there are certain academic assignments students have to complete. Students should not be able to avoid completing these assignments through making alternative choices. A further caution from Skinner, Wallace, and Neddenriep (2002) involves the possibility of students choosing tasks that do not promote learning, but are easy tasks for the student. The authors prompt teachers to closely monitor learning to ensure choice is promoting, and not decreasing, learning (Skinner et al., 2002).

**Choice and written expression.** Given evidence of the potential positive effects choice can have on academic performance and the need for accurate measures of written expression, it is plausible to introduce choice into curriculum-based measurement administration guidelines.
However, there is a scarcity of research on the potential impact of choice on written expression. To date, five studies have been conducted in the area, and all five studies have focused on a high school or college age population. Additionally, results of these studies have varied, with two studies concluding choice had a positive impact on writing performance, two studies reporting the opposite, and one with mixed conclusions.

Two studies (Allen, Holland, & Thayer, 2005; Bridgeman, Morgan, & Wang, 1997) demonstrated choice to have a positive impact on students’ writing performance. The first (Bridgeman et al., 1997) examined the writing performance of 915 high school students enrolled in either AP United States or AP European history classes. Students were instructed to select the essay topic they felt would lead to their best score. Out of four possible options, students were randomly given two topics to select from. Results indicated higher scores when students wrote about their preferred topic ($t(376) = 8.8, p < .001$). This study concluded that allowing the student to select their preferred topic from two options resulted in a more accurate representation of the students’ abilities (Bridgeman et al., 1997).

In 2005, Allen, Holland, and Thayer conducted follow-up analyses using the data from Bridgeman et al. (1997). Allen et al. (2005) analyzed the data using more sophisticated statistical analyses and confirmed the 1997 results. Despite the promise of these results, they are applicable only to a high school population and long essay writing. In addition, given the premise of a high-stakes, AP exam, these results are not generalizable to daily classroom writing.

Two of the five available studies examining the impact of choice on written expression have concluded choice had a neutral or negative impact on student writing performance (Gabrielson, Gordon, & Engelhard, 1995; Powers, Fowles, Farnum, & Gerritz, 1992). The first, Powers, Fowles, Farnum, and Gerritz (1992) involved asking 568 undergraduate students to rank
potential essay topics based on desirability. These essays were part of a mock PRAXIS test and were modeled after the style represented on PRAXIS tests. Students were presented with 20 options; six of the potential topics relied on personal experience and 14 of the topics relied on general knowledge. Researchers used a partial ranking order methodology wherein participants ranked one topic as their least preferred (1) and one topic as their most preferred (10). After deciding on topics that were most and least preferred, participants were instructed to rank the remaining 18 topics with a 2 or 9 indicating their preference for the essay topic. Following student ranking, students were randomly assigned two topics and were instructed to write about their more preferred topic. However, student ranking was not given consideration when assigning topics to students; therefore, one student could have received two prompts that were least preferred (ranked as 1 and 2) or two prompts that were most preferred (ranked as 9 and 10). Despite students choosing the more desired prompt of the two options given, it is still possible students would have been writing about a less desired topic. Results indicated a moderate negative correlation ($r = -0.52$) between student preference and performance on the writing task, with a large variance in preference for specific prompts.

Despite negative results, major limitations impact the generalizability and interpretation of these results. First, participants in the study were compensated for participation in the mock study. Therefore, participants were aware the essays they composed did not impact them. Although it was contrived, the high-stakes nature of this study limit generalizability to daily classroom activities in written expression. The method used for ranking topic preference did not allow for participants to express the full range of topic desirability; after ranking their most preferred (10) and least preferred (1) topics, participants were only able to rank the remaining topics as a 2 or 9. The authors assumed all topics ranked as a 9 were desirable by participants,
though participants may have ranked a lesser preferred topic as 9. This methodology limits potential conclusions about which topics were preferred and whether participants chose a preferred topic in the assessment. In addition, student compositions were assigned to a high-preference or low-preference category following data collection. Although researchers obtained data on student preference, these data were not used when deciding which prompts would be presented to students. If a student received two low preference topics, their choice may have been arbitrary and not based on realistic preference.

Additionally, researchers did not report data from all 20 possible prompts. Data from 8 of the 20 prompts was excluded, with researchers citing this data did not reflect a wide range of performance or measure up to ETS standards for writing samples (Powers, Fowles, Farnum, & Gerritz, 1992). Thus, it is possible data were skewed, as researcher bias is introduced when determining which data to either include or exclude.

A study conducted by Gabrielson, Gordon, and Engelhard (1995) examined the writing preference of 34,200 high school students and their subsequent performance on state-wide assessment in Georgia. In this study, half of students were assigned a persuasive prompt and half of students were given a choice of persuasive prompt from two possible options. Within the state-wide assessment, students were given one and a half hours to compose a response of no more than two pages. Student compositions were then scored on a 16-point rubric for quality, with results indicating choice did not have a significant impact on student writing performance. The authors concluded that individual student characteristics (e.g., race, gender) played a larger role in explaining differences in student performance.

Gabrielson, Gordon, and Engelhard (1995) reported choice did not have a positive impact on student writing, similar to Powers, Fowles, Farnum, and Gerritz (1992). There are, however,
limitations that impact the findings of the study. The authors note that persuasive writing is notably more difficult for students than narrative writing, which could have negatively impacted student performance. In addition, this study concluded choice did not have a positive impact on student writing performance on a high-stakes test in high school, and is likely not generalizable to other age ranges or situations. Finally, it is possible that giving students a length limit could have negatively impacted student expression. Students may not have accurately demonstrated their writing abilities due to the inability to exceed two pages of writing.

Most recently, H. D. Tindal (2017) conducted an action research study investigating the impact of choice on essay performance in an AP English Language class. In this study, 18 students were given a teacher-created prompt about a recently studied novel. After responding to this prompt, students created individual prompts about the novel and composed responses to their chosen prompt. This study did not involve forced-choice; pending teacher approval, students were able to write about a self-created prompt as opposed to being given options to choose from. After composing both essays, students responded to a survey which asked about student preference for teacher-created or student-created prompts and which condition students felt better represented their abilities and performance level. Results indicated students felt more challenged when creating their own topic but 72% of students reported they felt they wrote a better essay for the teacher-created prompt. While 44% of students indicated a preference for creating individual prompts in the future, 56% of students reported a preference for teacher-created prompts. Students reported equivalent levels of motivation to complete both essays to the best of their ability.

Significant limitations to this study impact the interpretation of the results. The author and researcher also served as the classroom teacher, which could have introduced inherent bias
into data. In addition, given the small sample size and the specific nature of the writing task, it is difficult to generalize results to other age ranges. Although the teacher-researcher scored each essay response, no analyses were conducted to determine differential student performance in teacher-created and student-created prompt conditions. Thus, the teacher-researcher drew conclusions based solely on survey response data. It is possible students preferred one condition but performed better in the alternative condition, but these data are impossible to access given the lack of data analysis.

Research investigating the impact of choice on student performance on written expression tasks has yielded mixed results. While some studies confirm a positive impact of choice (Allen, Holland, & Thayer, 2005; Bridgeman, Morgan, & Wang, 1997), others advocate choice has a neutral or negative impact on writing performance (Gabrielson, Gordon, & Engelhard, 1995; Powers, Fowles, Farnum, & Gerritz, 1992). Despite mixed reviews of choice in both academic and behavioral application, no study has determined choice to have a negative impact on all students. In 14 studies, positive outcomes when given choice were noted for some participants (Kern et al., 1998). Additionally, von Mizener and Williams (2009) state promising results for student preference of choice-making. Regardless of positive or neutral outcomes, some students prefer the ability to make choices.

Summary
Writing is a critical ability for students to develop. National data illustrate a stagnant trend with regard to writing performance, with only 27% of eighth graders and 24% of twelfth graders writing at the proficient level in 2011 (National Center for Education Statistics, 2012). With the compounding of poor writing skills, students are not making necessary progress to meet grade-level standards – students who struggle to perform at grade level in fourth grade are
continuing to struggle meeting grade level expectations in eighth and twelfth grade (Graham, McKeown, Kiuhara, & Harris, 2012). Considered the “neglected r” by the National Commission on Writing (2003), research in writing education and assessment has fallen behind research into reading and arithmetic. Given the advent of the Common Core State Standards as well as the RtI and CBM system, research should focus on valid and reliable writing assessment.

Within the RtI framework, students are monitored for progress with CBM measures while being exposed to evidence-based interventions. Despite a plethora of assessment tools and interventions geared towards reading and math remediation, there is a scarcity of CBM assessments and normative data for written expression. In addition, there has not been a critical evaluation of typical written expression curriculum-based measurement administration procedures. Thus, variations on typical administration have the potential to enhance student writing production and quality.

Choice of writing topic is presented as one alternative to traditional administration that could increase student writing production and quality. Research into the effects of choice have largely focused on the behavior and work completion of adults and students with severe disabilities (Dunlap et al., 1994; Parsons, Reid, Reynolds, & Bumgarner, 1990; Romaniuk & Miltenberger, 2001; Shogren, Faggella-Luby, Bae, & Wehmeyer, 2004). Results indicate that choice of academic task has potential to increase task completion, autonomy, and intrinsic motivation (Flowerday, Schraw, & Stevens, 2004; Grolnick & Ryan, 1987; Killu, Clare, & Im, 1999; Ostrow & Hefferman, 2015; Patall, Cooper, & Wynn, 2010; Skinner, Wallace, & Neddenriep, 2002). Research into the impact of choice on performance of written expression has yielded mixed results, with all five studies involving a high-achieving high school or college-age sample.
Purpose of Current Study

The current study sought to address limitations in the research of the effects of choice on written expression performance. To date, all studies have focused on a high-achieving high school or college age sample (Allen, Holland, & Thayer, 2005; Bridgeman, Morgan, & Wang, 1997; Gabrielson, Gordon, & Engelhard, 1995; Powers, Fowles, Farnum, & Gerritz, 1992; H. D. Tindal, 2017). There has been no study focusing on choice and student performance on curriculum-based measurement of written expression, and no study has determined the impact of choice on the writing production of elementary school students.

Research Questions and Hypotheses

Research question one. Does choice impact student writing production, as measured by Total Words Written? Previous research has indicated choice may have a positive impact on behavior and academic task completion (Dunlap et al., 1994; Parsons, Reid, Reynolds, & Bumgarner, 1990; Romaniuk & Miltenberger, 2001; Shogren, Faggella- Luby, Bae, & Wehmeyer, 2004). Cosden et al. (1995) noted positive effects of choice on task completion. However, there is little research on the effect choice has on written expression production. It is hypothesized that choice will have a positive impact on writing production; that is, students will produce more total words when given a choice of topic than when assigned a topic.

Research question two. Does choice impact student writing quality, as measured by Correct Writing Sequences and % Correct Writing Sequences? Cosden, Gannon, and Haring (1995) also noted a positive effect on task accuracy when students were afforded a choice of task. While there is no literature related to writing in this area, it is hypothesized students may choose a topic they are more knowledgeable about if given a choice. If students have more background knowledge of a topic (e.g., writing about a recent vacation), correct writing
sequences may improve. However, it is hypothesized that choice will have no impact on writing quality.

**Research question three.** Does choice impact males and females differently based on production and quality variables? Gabrielson, Gordon, and Engelhard (1995) concluded that gender had a more significant impact on written expression performance than choice alone. As females are considered to be superior writers (Gabrielson et al., 1995), it is hypothesized that choice will impact both writing production and writing quality of males more significantly. If a male student is able to choose a writing topic they are interested in, their production may increase.

**Research question four.** Does choice impact third, fourth, and fifth grade students differently on production and quality variables? Previous research has largely focused on students within one grade and has not compared students across grades. It is hypothesized choice will have a positive effect for fourth and fifth grade students, and a neutral effect for third grade students. As students are being asked to select the topic on which they will perform best, it is hypothesized third grade students may not have self-awareness of which topic is best suited for their abilities.

**Research question five.** Are students able to accurately report their performance across choice and no choice conditions (i.e., do students who indicate writing more words when given a choice produce more words in the choice condition)? Social validity data will focus on student perception of choice as well as student rationale for their chosen story starter. It is hypothesized that a majority of students will report making their choice based on trivial factors (i.e., my friend chose it, it was the first prompt I read). It is also hypothesized students will report favorable
opinions regarding choice and will advocate for its use in the classroom. It is hypothesized students will be unable to accurately report their performance on choice prompts.
CHAPTER II

Methods

Participants and Setting

Data collection occurred at a public elementary school in the Southeastern United States. The school district serves approximately 10,000 students. Of these students, approximately 68% are white, 7% are African-American, 24% are Hispanic, and 1% are Asian American. Within the district, 13% of students are considered to have limited English proficiency and 13% are considered students with disabilities. In addition, 46% of students are considered to be economically disadvantaged (Tennessee Department of Education, 2016).

The elementary school where data collection took place serves 613 students in kindergarten through fifth grade, of which 82.2% are white, 9.1% are Hispanic, 4.1% are African American, and 3.1% are Asian American. Approximately 49.1% of students are female and 50.9% of students are males. While 8% of students are considered to have limited English proficiency, 13.4% of students are identified as a student with a disability. In addition, 35% of students at this school are considered to be economically disadvantaged (Tennessee Department of Education, 2016).

All students in third through fifth grade participated in the study. However, data were analyzed only for students who provided both parental consent and student assent for data usage. Data collection occurred in general education classrooms in the winter of 2018. Researchers conducted data collection sessions with intact classrooms of students during the school day.

Demographics

Participants responded to demographic questions about their grade, age, gender, and race/ethnicity. Overall, this sample included 196 students, of which 68 were in third grade, 68
were in fourth grade, and 60 were in fifth grade. Thus, 34.7% of the sample was comprised of third grade students, 34.7% fourth grade students, and 30.6% were fifth grade students. With regard to age, 14.3% (n=28) of the sample reported being 8 years old, and 42.3% (n=83) were 9 years old. Additionally, 59 participants (30.1%) reported being 10 years old, and 26 (13.3%) reported being 11 years old.

Males composed 43.4% of the sample (85 participants), while 109 participants (55.6%) identified as female. A total of 2 participants (1%) indicated they preferred not to report gender information. With regard to race/ethnicity, 56.1% (110) of participants reported being White/Caucasian, 2.6% (5) African American, 6.6% (13) Native American, 4.6% (9) Asian American, 8.7% (17) Hispanic, 20.4% (40) Other, and 1% (2) Multiracial. However, during data collection, it was noted that students exhibited difficulties responding to this question. Many students responded with “other” if they were not immediately sure of their race/ethnicity, which likely skewed results of this question. Within the school as a whole, 82.2% of students are white, 9.1% Hispanic, 4.1% African American, and 3.1% Asian American (Tennessee Department of Education, 2016). It is noted that this sample is in line with overall percentages of Hispanic, African American, and Asian American students in the school as a whole. The percentage of students who reported being White/Caucasian is 26% lower in this sample than in the school overall. It is likely a portion of White/Caucasian students misreported their race/ethnicity as “other.”

Materials

Materials included a UTK IRB approved consent form. This Parent Consent Form is included in Appendix A. A Spanish Consent Form, translated by the lead researcher, was sent home to students whose primary language is Spanish. The primary material used during data
collection was a student packet. This packet included a UTK IRB approved Youth Assent Form, which can be found in Appendix B. The packet also contained a demographic form, included in Appendix C. The demographic form asked students for their age, gender, and race/ethnicity. Students completed both Choice and No Choice prompts in the packet. A social validity survey, located in Appendix F, was also included in the student packet.

Other materials included scripts to ensure data collection is completed with integrity. A script for implementation of assent and the demographic questionnaire is included in Appendix G. Scripts for both the choice and no choice conditions are provided in Appendix H. Additionally, each script has a corresponding integrity checklist completed during data collection; these are provided in Appendices I and J.

**Dependent Measures and Interscorer Reliability**

The primary dependent measures in this study are Total Words Written (TWW), Correct Writing Sequences (CWS), and Percentage Correct Writing Sequences (% CWS). When scoring CBM measurements for written expression, both production-dependent and production-independent measures have adequate reliability and validity (Marston & Deno, 1981; McMaster & Espin, 2007). Production-dependent measures (e.g., TWW, CWS) refer to any measure in which a student’s performance is dependent on the amount of words a student writes. These measures correlate with criterion referenced assessments of writing, such as the Test of Written Language (Vindeen et al., 1982) and the Stanford Achievement Test (Gansle et al., 2006).

Production-independent measures refer to a scoring metric in which student performance is not related to the number of words produced. Percentage of correct writing sequences (% CWS), an example of a production-independent scoring metric, has been demonstrated to correlate with middle school teachers’ holistic ratings of their students writing abilities (G.
Tindal & Parker, 1989). In addition, Jewell and Malecki (2005) demonstrated that production-independent measures (e.g., % CWS) are more closely related to criterion-referenced measures than production-dependent scoring metrics in both elementary and middle school and are considered a more accurate view of a students’ writing abilities.

**Total words written (TWW).** One dependent measure in this study will be the number of words written by each student. As defined by G. Tindal and Parker (1989), TWW is any group of letters separated by a space, even if the word is misspelled or not a word in the English language. In addition, errors in grammar or syntax do not affect a students’ score on this metric. Total Words Written is purely a writing production measure to determine how much a student can produce within a given time period (Jewell & Malecki, 2005). This measure has been found to have a strong correlation with Correct Writing Sequences for elementary school students (Gansle et al., 2006) and an increase in word production has been linked with writing quality improvements (Powell-Smith & Shinn, 2004).

McMaster and Campbell (2007) examined the reliability of TWW as a scoring metric by administering writing probes throughout a school year. Results indicated test-retest reliability of .60-.76 across students in elementary and middle school (McMaster and Campbell, 2007). While the correlation between Total Words Written and standardized assessment performance has been demonstrated (Deno, 1985; McMaster & Espin, 2007), Jewell and Malecki (2005) found the criterion validity correlation between Total Words Written and student performance on the Stanford Achievement Test to decrease with age across second, fourth, and sixth grade (.24, .22, -.14). Thus, while Total Words Written is considered by researchers to be an adequate scoring metric for elementary school students, student responses in this study will be scored on multiple metrics.
Correct writing sequences (CWS). Vindeen et al. (1982) define a Correct Writing Sequence as either two words or a word and a punctuation mark that are both grammatically correct and correctly spelled in the context of the English language. This metric is considered a production-dependent variable; a student who produces more text in a given time period has a greater chance of obtaining a higher score on this metric. However, Jewell and Malecki (2005) argue for CWS as a superior production-dependent variable, as it takes into account the nuances of grammar, spelling, and punctuation within the English language. Correct Writing Sequences is considered a valid metric for evaluating accuracy of student writing performance (G. Tindal & Parker, 1989; Vindeen et al., 1982). Evaluating accuracy is a critical piece of writing assessment, as the ability to accurately convey ideas is considered more important in college and career settings than pure word production.

McMaster and Campbell (2007) additionally examined the test-retest reliability of CWS and found reliability ranges of .57 to .68 across third, fifth, and seventh grade students. Similar to TWW, Jewell and Malecki (2005) found criterion validity correlations between CWS and student performance on the Stanford Achievement Test to diminish with age across second, fourth, and sixth grade (.57, .46, .23, respectively). However, correlations between CWS and performance on criterion-referenced assessments remains higher than correlations with TWW, indicating CWS may better predict student performance on state and nation-wide assessments.

Percentage correct writing sequences (% CWS). Percentage Correct Writing Sequences is considered a production-independent measure of writing performance as student scores on this metric are not influenced by the length of a students’ written work (Jewell & Malecki, 2005). This metric will be calculated by dividing the total number of CWS by the total number of CWS plus incorrect writing sequences (IWS) and multiplying by 100, resulting in a
Percentage of Correct Writing Sequences. Examining the Percentage Correct Writing Sequences carries similar reliability and validity results as Correct Writing Sequences, but may provide more accurate information for older writers (McMaster & Espin, 2007).

**Interscorer reliability.** In order to ensure adequate reliability in scoring, interscorer reliability was calculated to determine agreement between scorers. Interscorer reliability was calculated across 30% of data across both conditions and encompassed all scoring variables (TWW, CWS, % CWS). Three members of the research team (the lead researcher and two additional students) conducted interscorer reliability checks. The additional students and the lead researcher completing scoring together until reliability was established. Reliability was calculated by dividing the total number of agreements by the total number of agreements plus disagreements. This value was then multiplied by 100 to obtain a percentage of interscorer reliability. The minimum acceptable agreement was set at 80%. If interscorer reliability fell below 80%, research team members were retrained in scoring procedures until interscorer reliability improved. Results indicated interscorer reliability ranged from 91.5-100% across all dependent variables, indicating adequate scorer reliability.

**Independent Variable**

The primary independent variable in this study was student choice of story starter. All students were exposed to a condition in which they were able to choose their story starter (i.e., Choice) and a condition where the story starter was chosen for them (i.e., No Choice).

**Procedures**

Approval for this study was obtained through the University of Tennessee’s Institutional Review Board (IRB), the principal of the participating school, as well as the Director of Schools for the participating county system. Approval letters from the principal and the Director of
Schools are included in Appendices M and N, respectively. Data collection took place during an hour-long block of the school day that teachers devote to writing instruction. Each class was disrupted for approximately 20-30 minutes on one day, and no other academic or extracurricular activities were interrupted. Following study approval, parent consent forms were sent home with all students in third-fifth grade.

**Researcher training.** The primary researcher, a graduate student in School Psychology, along with other supporting members of the research group, participated in administration and scoring training. The research group, led by a well-known writing researcher, has collected data for multiple writing-based projects, and have had experience in administration and scoring. In total, seven members of the research group participated in training and data collection. This training focused on ensuring reliable administration and scoring of writing samples. During training, scorers completed several examples as a group, and then independently scored 10 writing samples. Scorers were unable to participate in data scoring until agreement for each dependent variable was above 90%. Additionally, the primary researcher trained supporting graduate students on the administration scripts for assent, writing prompts, and the social validity survey. The primary researcher provided supporting research group members with copies of scripts and group members practiced talking through the script, while others completed procedural integrity checklists to ensure proper administration.

**Packet development.** Participants were exposed to both conditions (i.e., Choice or No Choice) and each condition presented two story starters to the student. Therefore, four story starters were needed for this project. In the Choice condition, the student determined which story they wanted to write from the two prompt options. In the No Choice condition, one story prompt was circled and one was crossed out. The student did not have a choice and was instructed to
write about the circled prompt. To randomize the story starters, story starters were assigned a letter – A, B, C, or D. All story prompts were narrative, following guidelines by McMaster, Du, and Petursdottir (2009) indicating narrative story prompts are the most reliable probe for elementary school students. Prompts were selected by the research team and lead researcher in conjunction with the faculty advisor. Story starter combination and condition were counterbalanced, with students being presented with two story starters in Condition 1 and the remaining two story starters in Condition 2. All possible pairings of story starters and condition are listed in Table P1 (Appendix P). The order of the story starters within each condition (e.g., A-C vs. C-A) was randomized along with the order of the conditions (e.g., Choice then No choice vs. No Choice then Choice). This resulted in 48 possible pairings of story starter and condition.

In the Choice condition, two prompts were typed at the top of the page with lines below for students to write their response. In the No Choice condition, two prompts were typed at the top of the page with a line through the prompt they were not able to write and the predetermined prompt circled. Examples of the both Choice and No Choice conditions including the selected story starters are provided in Appendices D and E, respectively. The two randomized conditions, Choice and No Choice, were included in the student data collection packet following assent and demographic forms; however, the order of the conditions and the story prompts within each condition was randomized for each student.

Prior to data collection, the primary researcher created packets which contained youth assent, the demographic questionnaire, Choice and No Choice condition story starters (in a randomized order), and the social validity survey. As there were 48 possible combinations of prompt, prompt order, and order of conditions, the primary researcher created 48 packets.
(representing combinations 1-48) and then started back and created 48 more. These packets did not include student names prior to data collection.

**Data collection.** On the day of data collection, the primary researcher and supporting graduate students entered the classroom with the premade packets in manila folders. Packets were randomly distributed to each student in the classroom. Students were instructed to write their first and last name on the assent form and were assured their name would be removed from all data before the primary researcher left the school building.

The primary researcher and supporting graduate students administered youth assent and the demographic questionnaire following the script in Appendix G. All students participated in data collection regardless of parent consent or youth assent status, but data was only analyzed for students who had both parent consent and youth assent. Next, students were instructed to turn the page. Following the script for data collection in Appendix H, the primary researcher instructed students to examine the story starters and determine which condition (Choice vs. No Choice) they were responding to. An individual students’ story starters were not read aloud. Supporting graduate students walked around the room to assist students needing help and to ensure that students were following directions appropriately. Once all students were aware of their condition and those in the choice condition had selected a story prompt, they were given one minute to plan their story, and five minutes to write their response. Students were prompted after three minutes to circle the last word they wrote.

Next, all students were instructed to turn the page again. Following the data collection script in Appendix H, students were told they were now in the opposite condition and instructed to examine the story starters. Supporting graduate students were available to assist students who may have needed help or clarification of directions. Once all students in the choice condition
made their selection, students were given one minute to plan their story, and five minutes to compose their response. Students were prompted after three minutes to circle the last word they wrote. All students wrote a response for both the choice and no choice condition, although the story prompts, prompt order, and order of condition were random and counterbalanced.

Following data collection, students completed a social validity scale, which is included in Appendix F. This questionnaire prompted students to provide their opinions on both conditions as well as their rationale for the story prompt they chose to write. In addition to prompting students to report whether they enjoyed having a choice of writing prompt and whether they would like their classroom teachers to incorporate choice into their writing assignments, the social validity survey queried students about their rationale behind their decision to choose their story starter. This question was presented in multiple-choice format with various options for potential reasoning, with an option for students to write their own response if they did not agree with any of the presented options. The final items asked students to indicate whether they believe having a choice resulted in better writing, as measured by a students’ estimate on their Total Words Written and Correct Writing Sequences.

Once all elements of data collection were completed, researchers collected the packets. At this time, the primary researcher assigned each participant a research number. No student names were attached to data before leaving the school building to protect student confidentiality. The master list of student names and research numbers is kept separated in a locked file cabinet in the faculty advisor’s office.

**Procedural integrity.** For 40% of classroom-wide data collection sessions, a graduate student completed procedural integrity. Procedural integrity checklists for securing assent/completing the demographic questionnaire as well as data collection are provided in
Appendices I and J, respectively. These checklists were derived from the script and were used to measure how closely the primary researcher followed relevant steps for data collection. The percentage of procedural integrity is the result of dividing the total number of accurately completed steps by the total number of possible steps on the script, and multiplying the result by 100. This percentage allowed the primary researcher to ensure that data collection procedures were implemented with integrity. Across three lead researchers, procedural integrity was 100%, indicating procedures were followed with a high level of integrity.

**Data analysis.** Data analysis plans are detailed for each research question below.

For Research Questions 1 and 2 (i.e., Does choice impact student writing production, as measured by Total Words Written and student writing quality, as measured by Correct Writing Sequences and % Correct Writing Sequences?), a dependent samples t-test was conducted to determine whether choice makes a significant impact on student writing production (Total Words Written, Correct Writing Sequences, and Percentage Correct Writing Sequences). As all students were exposed to each condition, a dependent samples t-test is most appropriate.

For Research Question 3 (i.e., Does choice impact males and females differently on production and quality variables?), a Repeated Measures ANOVA was conducted to determine whether choice differentially impacts students based on gender. One Repeated Measures ANOVA was conducted for Total Words Written and one was conducted for Correct Writing Sequences. Follow-up analyses included paired samples t-tests to determine the location of significant results.

For Research Question 4 (i.e., Does choice impact third, fourth, and fifth grade students differently on production and quality variables?), a Repeated Measures ANOVA was conducted to determine whether choice impacts students in third, fourth, and fifth grades differently. As
noted above, one ANOVA was conducted for each dependent variable (Total Words Written, Correct Writing Sequences). Paired samples t-tests were used as a follow-up analysis to determine the location of significant results.

For Research Question 5 (i.e., Are students able to accurately report their performance across choice and no choice conditions (i.e., do students who indicate writing more words when given a choice produce more words in the choice condition)?), frequencies were tabulated comparing students’ objective performance to their beliefs of their performance. In addition, descriptive statistics will be provided to illustrate student preference for choice as a writing methodology.
CHAPTER III

Results

Results will be presented in order of each research question. Student performance on the two writing tasks, as well as demographic information and results of the social validity survey, will be discussed.

National Norms Comparison

Obtained scores were compared to AIMSweb national norms for written expression, collected in the 2016-2017 school year (Pearson, 2017). As students participating in the normative data collection were not given a choice of story starter, scores obtained during the “no choice” condition of this study will be used for comparison. In the “no choice” condition, third grade students produced an average of 23 words. AIMSweb benchmark data shows the 25th percentile of third grade students produce 25 words based on winter norms, which indicates the current sample of third grade students performed below the 25th percentile. Students in fourth grade produced an average of 29 words, which is below the 25th percentile of AIMSweb benchmark norms (31 words). Lastly, fifth grade students wrote an average of 34 words in 3 minutes. AIMSweb benchmark data indicates that, based on winter norms, the 25th percentile of fifth grade students produce 37 words in 3 minutes. Thus, the current sample performed below the 25th percentile across all grade levels according to AIMSweb normative data. Additionally, many students did not circle the last word they wrote at the 3-minute time mark, which may have skewed the normative data comparison.

Impact of Choice on Writing Production

Does choice impact student writing production, as measured by Total Words Written? To determine whether mean differences in Total Words Written exist between choice and no choice
conditions across all participants, a dependent samples t-test was conducted. As students circled
the last word they had written at 3 minutes, one dependent samples t-test was conducted for
Total Words Written at 3 minutes, and one dependent samples t-test was conducted for Total
Words Written overall (5 minute time length). Descriptive statistics are provided in Table P2.

A dependent samples t-test indicated a statistically significant difference between the
number of words students had written at 3 minutes when given a choice (\( \bar{x} = 30.8 \)) versus not
(\( \bar{x} = 28.8 \)), with \( t(178) = 1.98, p = .05 \). However, while students produced more words at 3
minutes when given a choice, the difference accounts for 2.2% of the variance in scores on this
metric.

A dependent samples t-test indicated a statistically significant difference between the
total number of words students had written when given a choice (\( \bar{x} = 47.6 \)) versus not (\( \bar{x} =
44.8 \)), with \( t(195) = 2.14, p = .03 \). However, while students produced approximately 3 more
words when given a choice, the difference accounts for 2.3% of the variance between scores on
this metric.

**Impact of Choice on Writing Quality**

Does choice impact student writing quality, as measured by Correct Writing Sequences,
Incorrect Writing Sequences, and Percent Correct Writing Sequences? Dependent samples t-tests
were conducted to determine if choice impacted student writing quality. One dependent samples
t-test was conducted for each dependent measure, resulting in three dependent samples t-tests.
See Table P3 for descriptive statistics.

A dependent samples t-test indicated a statistically significant difference between Correct
Writing Sequences in the choice (\( \bar{x} = 44.8 \)), versus no choice conditions (\( \bar{x} = 42.0 \)), with
\( t(195) = 2.21, p = .03 \). However, while students produced more correct writing sequences when
given a choice of story starter, the difference accounts for 2.4% of the variance between correct writing sequences across conditions.

A dependent samples t-test indicated no differences between Incorrect Writing Sequences across conditions (choice $\bar{x} = 6.4$; no choice $\bar{x} = 6.3$), with $t(195) = .174, p = .86$. Similarly, a dependent samples t-test indicated no differences between Percent Correct Writing Sequences across conditions (choice $\bar{x} = 85.8$; no choice $\bar{x} = 86.1$), with $t(195) = -.373, p = .71$.

**Differential Impact of Choice on Males and Females**

Does choice impact males and females differently on production and quality variables (Total Words Written and Correct Writing Sequences)? First, independent t-tests were conducted to determine if the performance (total words written and correct writing sequences) of males and females differed significantly across choice and no choice conditions. Then, one repeated measures ANOVA was conducted to determine if males and females responded differently to choice with respect to Total Words Written, and one repeated measures ANOVA was conducted for Correct Writing Sequences.

An independent samples t-test was conducted for Total Words Written to determine if the performance of males and females differed significantly from each other in choice and no choice conditions. In the no choice condition, males wrote an average of 40.6 words, while females wrote an average of 48.5 words. Results indicated a statistically significant difference between the total words written of males and females in the no choice condition, with $t(192) = -2.86, p = .005$. In the choice condition, males wrote an average of 43.9 words, while females wrote an average of 50.7 words. This difference was significant, with $t(192) = -2.40, p = .017$. Thus, females performed statistically better than males in both choice and no choice conditions with respect to total words written. Refer to Table P4 for descriptive statistics.
Independent samples t-tests were similarly conducted for correct writing sequences to investigate if the performance of males and females differed in choice and no choice conditions. In the no choice condition, males produced an average of 37.7 correct writing sequences, while females produced an average of 45.8 correct writing sequences. Results indicated a statistically significant difference between these averages in the no choice condition, with \( t(192) = -2.77, p = .006 \). In the choice condition, males produced an average of 40.1 correct writing sequences, while females produced an average of 48.9 correct writing sequences. This difference was also significant, with \( t(192) = -2.93, p = .004 \). Thus, females produced a significantly higher amount of correct writing sequences than males across choice and no choice conditions. Descriptive statistics are provided in Table P5.

A repeated measures ANOVA was conducted for Total Words Written. The Mauchly’s Test of Sphericity did not reveal a violation of the assumption of sphericity, therefore no correction was needed. Results indicated no significant differences between the mean difference in total words written by males and females on choice vs. no choice prompts, with \( F(2, 193) = .348, p = .71 \) (see table 6). Although the mean difference between total words written was slightly higher for males (3.3 more words when given a choice) than females (2.2 more words when given a choice), this difference was not statistically significant. Results are provided in Table P6.

A repeated measures ANOVA was conducted to determine if males and females responded differently to choice with regard to correct writing sequences. The Mauchly’s Test of Sphericity did not indicate violations of sphericity. Results indicated no significant differences between the correct writing sequences by males and females on choice vs. no choice prompts, with \( F(2, 193) = .099, p = .91 \) (see table 7). Although the mean difference between correct
writing sequences was slightly higher for females (3.1 more correct writing sequences when given a choice) than males (2.3 more correct writing sequences when given a choice), this difference was not statistically significant. Results are provided in Table P7.

**Differential Impact of Choice on Third, Fourth, and Fifth Grade Students**

Does choice impact third, fourth, and fifth grade students differently on production and quality variables (Total Words Written and Correct Writing Sequences)? One repeated measures ANOVA was conducted to determine if third, fourth, and fifth grade students responded differently to choice with respect to Total Words Written, and one repeated measures ANOVA was conducted for Correct Writing Sequences.

A repeated measures ANOVA was completed to determine if students in differing grade levels responded differently, judged by total words written, to a choice of writing prompt. Mauchly’s test of Sphericity indicated no corrections were needed, as the assumption of sphericity was not violated. Results of the repeated measures ANOVA indicated a significant interaction between number of words written across choice and no choice conditions and grade, with $F(2, 193) = 5.33, p = .01$ (see table P8).

To determine the location of the differences, a paired samples t-test was conducted. Descriptive statistics are provided in table 9. The paired samples t-test revealed significant differences between total words written in choice and no choice conditions for third grade students, $t(67) = 2.32, p = .02$, and for fifth grade students, $t(59) = 2.86, p = .01$. However, significant differences were not found for fourth grade students, with $t(67) = -1.27, p = .21$. Thus, choice of topic resulted in significantly greater total words written for third and fifth grade students, while it resulted in fewer total words written for fourth grade students (see Table P9).

A second repeated measures ANOVA was conducted to determine if third, fourth, and
fifth grade students responded differently, based on correct writing sequences, to a choice of writing prompt. Mauchly’s test of Sphericity indicated the assumption of sphericity was not violated. Results of the repeated measures ANOVA indicated a significant interaction between correct writing sequences across choice and no choice conditions and grade, with $F(2, 193) = 5.89, p = .003$ (see Table P10).

A paired samples t-test was conducted to determine how each grade was affected by choice. Descriptive statistics are provided in table 11. Results of the paired samples t-test revealed significant differences in correct writing sequences for third grade students, $t(67) = 2.84, p = .006$, and for fifth grade students, $t(59) = 2.54, p = .01$. Significant differences were not found for fourth grade students, with $t(67) = -1.48, p = .14$. Thus, choice of topic resulted in significantly higher quality writing (as measured by correct writing sequences) for third and fifth grade students, while choice resulted in fewer correct writing sequences for fourth grade students (see Table P11).

**Accuracy of Student Reported Performance**

Are students able to accurately report their performance (i.e., do students who indicate they performed better when given a choice actually write better on prompts they chose)? Students responded to two questions regarding their opinions on their performance: “Do you think you wrote more words when you had a choice?” and “Do you think you wrote a better story when you had a choice?” in a yes-no, forced choice format. In order to address this question, student performance variables (Total Words Written and Correct Writing Sequences) were recoded into new variables representing an individual student’s performance. For example, if a student’s Total Words Written score was higher when they had a choice, the new variable would be coded as a 1. However, if a student’s Total Words Written score was lower when they
had a choice, the new variable would be coded as a 2. This same process was followed for Correct Writing Sequences scores, resulting in two new variables which represent whether a student performed better or worse on Total Words Written and Correct Writing Sequences when given a choice. Following the creation of these new variables, a Chi-Square Test of Independence was conducted to determine the relationship between student performance and student opinions about their performance.

As the research question does not pertain to statistical significance, but rather descriptive data, frequencies were tabulated from the Chi-Square Test of Independence. With regard to the social validity question “Do you think you wrote more words when you had a choice?”, 128 students (65.3%) accurately reported their performance (see table 12). Of these, 82 participants reported writing more words when they had a choice and did, while 46 reported they wrote fewer words when they had a choice and did write fewer words. However, 68 students (34.7%) did not accurately report their performance with respect to Total Words Written. Of that 68, 42 reported believing they wrote more words when they had a choice and actually wrote fewer, while 26 reported believing they wrote fewer words when they had a choice but actually wrote more words. Results are provided in Table P12.

With respect to the social validity question “Do you think you wrote a better story when you had a choice?”, 116 participants (59.2%) accurately reported their performance. Descriptive statistics are provided in table 13. Of that 116, 92 students reported they wrote a better story when they had a choice and did, while 24 students reported they did not write a better story when given a choice and they did not. 80 students (40.8%) did not accurately report their performance. Of those 80 students, 61 reported writing a better story when given a choice and did not, while
19 reported writing a poorer story but actually wrote a better story, as measured by Correct Writing Sequences (see Table P13).

Social Validity

Results will be presented for questions 1-4 on the social validity survey. Questions 5 and 6 (“Do you think you wrote more words when you had a choice?” and “Do you think you wrote a better story when you had a choice?”) were addressed above.

**Question one.** “When you had a choice, which story did you choose?” Students indicated which of the four story prompts they chose when they were given a choice. Students received a choice between two of the four prompts, so it is not valid to draw conclusions on prompt preference based on these data, as students were not able to choose between all four prompt options. In this sample, 34.4% of the sample indicated choosing “The best thing about summer is…”, and 28.7% chose “My best friend and I like to…”. “At recess, I like to…” was chosen by 25.1% of participants, while “My favorite TV show is…” was selected by 11.8% of students.

**Question two.** “Why did you choose that story?” Students were given five possible options to choose from, as well as an option to write in their own reasoning for why they selected their story. In this sample, 50.5% of participants indicated “I had a good idea for the story” as the reason for their choice, while 16.8% of students selected “I thought I could write an interesting story.” “I didn’t like the other option” was endorsed by 9.7% of participants, and 3.1% of students selected “I thought of a funny story about the topic”. Lastly, 1.5% of participants selected “My friend chose it”, and 18.4% of students elected to write in their own reasoning. General themes of these responses indicated a preference for the topic (e.g., “summer is cool,” “my birthday is in the summer”) or responses that represented a rewording of one of the provided options (e.g. “it was interesting,” “I wanted to write about my ideas”).
**Question three.** “Did you like having a choice of what you wrote about?” Students responded to this question in a yes or no, forced choice format. Of the 196 participants, 182 students (92.9%) indicated a preference for having a choice, while 14 students (7.1%) responded they did not like having a choice of topic.

**Question four.** “Would you like your teachers to allow you to choose what you write about more often?” Similar to questions above, students responded either yes or no. Of the 196 students, 161 participants (82.1%) indicated a desire for their teachers to allow them a choice of writing topics more frequently, while 35 students (17.9%) reported they would not like more choice of writing topics in the future.
CHAPTER IV

Discussion

Writing is a critical skill for students to develop, with poor writing skills compounding across grade levels (Graham, McKeown, Kihara, & Harris, 2012). Data from the National Center for Education Statistics (2012) indicates the majority of students are not mastering writing skills at the fourth, eighth, and twelfth grade levels. It is essential that students are identified early so instruction and intervention can focus on the prevention of writing difficulties. The current study evaluated choice as a potential method to increase writing production and quality in elementary school students. While previous research has investigated choice related to writing (e.g., Bridgeman, Morgan, & Wang, 1997; Gabrielson, Gordon, & Engelhard, 1995; H. D. Tindal, 2017), there is a lack of consensus on the impact of choice on student writing. In addition, no available study examined the impact of choice with elementary school students.

Applied and Theoretical Implications

Impact of choice on writing production. Student data were analyzed to determine if prompt choice impacted writing production, as measured by total words written. It was hypothesized that choice would have a positive impact on student writing production, meaning total words written would be higher when students were given a choice of writing prompt as opposed to when they did not have a choice. Results indicated a statistically significant difference between total words written in the choice and no choice conditions both at 3 and 5 minute time intervals, indicating students produced statistically significantly more words when given a choice. While the difference was statistically significant, there is little practical significance in the results, as students produced an average of two more words when given a choice at 3 minutes, and an average of three more words when given a choice at 5 minutes.
While these differences do not hold much practical significance, even small gains in student writing production can be meaningful.

It is possible the difference between writing production in choice and no choice conditions would be of a greater magnitude had students written the prompts on separate days as opposed to one after the other. Conditions were counterbalanced to ensure randomization of prompt order, though it was noted students wrote an average of 10.5 more words on the second prompt written, regardless of condition. Thus, it is possible writing two prompts in the same session diminished the impact of choice given the inherent performance benefit students experienced on the second prompt. If prompts were written on separate days, this impact may be reduced.

Additionally, it is possible choice alone was not a salient enough antecedent stimulus for students in the current study. Pairing choice of writing prompt with a reward related to writing (i.e., a pencil, eraser, or notepad) for performance increases may yield more conclusive results. Despite the limited overall impact, choice of writing prompt produced large increases in total words written for several students. One student produced 61 more words when given a choice, with several others writing 35-50 more words in the choice condition. Of particular significance are two students who had the most significant production increases. One fourth grade student wrote only six words in the no choice condition, and was able to produce 24 words when given a choice, which is an increase of a factor of four. A fifth grade student wrote five words in the no choice condition and produced 45 words when given a choice, a 900% improvement. While choice may not have yielded significant results for all students, several students benefited from choice of prompt. Response to choice may be initially assessed before working with an individual student and used only if the student responds positively to choice. Previous choice
research has not examined student writing production in isolation. Previous studies have utilized holistic rubrics to evaluate student performance (e.g. Bridgeman, Morgan, & Wang, 1997), and while writing production may have been included, there is no previous research available to compare with present results.

**Impact of choice on writing quality.** Student data were analyzed to determine whether having a choice of writing prompt impacted writing quality, as measured by correct writing sequences, incorrect writing sequences, and percent correct writing sequences. It was hypothesized that prompt choice would have no significant impact on quality variables, though students may have selected a topic they were more knowledgeable about and thus increased their writing quality. Results indicated no significant difference in either incorrect writing sequences or percent correct writing sequences between choice and no choice conditions, and as a result, these variables were not used in any follow up analyses. There was a statistically significant difference in correct writing sequences across choice and no choice conditions, with students producing significantly more correct writing sequences when given a choice of writing prompt. However, there is little practical significance in this finding, as only 2.4% of the variance in scores across conditions can be accounted for by choice. In addition, students produced an average of 2.8 more correct writing sequences overall in the choice condition when compared to the no choice condition.

Bridgeman, Morgan and Wang (1997) demonstrated a positive impact of choice on writing quality on content-based writing performance. Students in an Advanced Placement course produced higher quality writing when given a choice of content-based essay prompts (Bridgeman, Morgan, & Wang, 1997). None of the previously conducted studies investigated student performance on creative or narrative prompts. It is possible that greater differences in
correct writing sequences would be present in the current study had prompts been focused on curriculum content (e.g., a choice between two history topics) as opposed to narrative and creative prompts. It was noted, though not empirically tested, that students tended to write more sophisticated stories when given a choice of prompt. For example, in choice conditions, students often provided more details about vacation destinations or details about character names in their favorite video games or television shows than in the no choice conditions. In an effort to write a more descriptive story, student correct writing sequences were not as high due to lack of correct spelling of these details and personal nouns. This difference may not be as pronounced when students are writing essays based on curriculum content.

**Differential impact of choice on males and females.** With regard to the research question of whether males and females were differentially impacted by choice and no choice conditions, it was hypothesized that choice would positively impact males more than females. It was hypothesized males would increase in their writing production (total words written) and quality (correct writing sequences) more than females. Results revealed that females performed significantly higher than males in both choice and no choice conditions on writing production and quality variables. Across all conditions and variables, the performance of females was better than males at a statistically significant level. When evaluating whether males or females improved significantly more when given a choice, it was found that there were no significant differences between the way males and females responded to choice. Males produced an average of 3.3 more words in 5 minutes when given a choice, while females produced an average of 2.2 more words. While males showed greater increases in total words written in the choice condition, females improved at a higher rate with respect to correct writing sequences. On average, females produced 3.1 more correct writing sequences in the choice condition, while
males produced an average of 2.3 more correct writing sequences when given a choice. Males and females did not respond significantly different when given a choice on either production or quality variables.

Gabrielson, Gordon, and Engelhard (1995) reported females to be superior writers regardless of any variation in task administration. These results have been supported by many other researchers (Cole, 1997; Pajares & Valiante, 2001). Results of the current study confirm this assertion, with females performing significantly higher than males in both choice and no choice conditions on writing production and quality variables. Gabrielson, Gordon, and Engelhard (1995) also asserted that confounding variables such as gender and race played a more significant role in performance differences than choice alone. The results of the current study do not support this finding; males and females did not respond differently to choice. However, as the 1995 study focused on high school students’ performance on state-wide assessments, disparities between results found by Gabrielson, Gordon, and Engelhard (1995) and results of the current study are expected.

One possible rationale for the lack of difference between performance of males and females in the current study lies in the choice made. While 33% of males selected story prompt “My favorite TV show is…”, 70% of females selected “The best thing about summer is…” or “My best friend and I like to…” when given a choice. Writing about a favorite television show inherently involves character names and names of television shows that may be more difficult to spell. However, selecting topics that allow the student to talk about friends and summer may not involve a difficult vocabulary. It is possible males did not respond to choice significantly different than females due to selecting story prompts that may have been more difficult with regard to correct writing sequences.
A second possible rationale for the lack of statistical difference in the performance between males and females could involve the achievement gap. On writing tasks in the no choice condition, females produced 7.9 more words and 8 more correct writing sequences than their male counterparts on average. Males would have needed significant increases in performance to keep pace – in the choice condition, females produced 6.8 more words and 8.8 more correct writing sequences than males on average. While males were able to slightly close the gap with total words written, the gap with correct writing sequences widened. Thus, despite males benefitting from choice with a higher number of total words written and correct writing sequences in the choice condition, the gap was too wide from the beginning. While there were no statistically significant differences between males and females in the way they responded to being given a choice, both males and females benefitted and were able to produce both more total words and correct writing sequences when given a choice of writing topic.

**Differential impact of choice on third, fourth and fifth grade students.** Student data were analyzed to determine if third, fourth, and fifth grade students responded differently to being given a choice. It was hypothesized choice would positively impact fourth and fifth grade students, while choice would have a neutral impact on third grade students with both production and quality variables. It was believed that third grade students would lack the self-awareness to select a topic best suited for their writing skills, while fourth and fifth grade students would be able to select a topic that would allow them to demonstrate their best performance. Results indicated, for total words written, a positive effect for third and fifth grade students, with a negative effect for fourth grade students. Therefore, both third and fifth grade students produced significantly more words when given a choice, where fourth grade students produced fewer words when given a choice. Results revealed a similar pattern for correct writing sequences, with
a positive effect for third and fifth grade students, and a negative effect for fourth grade students. Both third and fifth grade students produced significantly more correct writing sequences when given a choice of story prompt, while fourth grade students produced fewer correct writing sequences in the choice condition.

Currently, there is no logical rationale for the negative impact of choice on fourth grade students. Future research should include fourth grade students to determine if this negative impact on fourth grade is replicated. Future research investigating the impact of prompt choice on writing performance of middle school students may further help illuminate the differential impact of choice across grade levels.

Social validity. Social validity data were examined to determine if students accurately reported their performance and to evaluate student opinion on choice related to writing prompts. It was hypothesized the majority of students would report trivial rationale for their choice (i.e., “my friend chose it”). In addition, it was hypothesized students would report favorable opinions regarding choice and would advocate for choice to be used more frequently in the classroom. Lastly, it was hypothesized students would be unable to accurately report their performance, and student responses to “Do you think you wrote more words when you had a choice?” and “Do you think you wrote a better story when you had a choice?” would not match objective performance.

Results revealed 67.3% of students reported making their choice either due to having a good idea for the story, or thinking they could write an interesting story about the topic. Only 1.5% of students reported their choice was due to a trivial factor, such as seeing their friend choose the topic. This finding is a strength of the current study, as it indicates students reported making their choice for personal factors, as opposed to peer-related factors. With regard to student acceptability of choice, 92.9% of participants indicated they enjoyed having a choice of
writing topic, while only 7.1% reported not liking topic choice. Over two-thirds of participants (82.1%) reported a desire for choice of writing topic to be used more often in the classroom, with 17.9% of students indicating they would not like to have a choice of writing topic in the classroom more frequently. Additionally, 65.3% of students accurately reported their writing production performance, and 59.2% of students accurately reported their writing quality performance. That is, over half of students responded to “Do you think you wrote more words when you had a choice?” and “Do you think you wrote a better story when you had a choice?” correctly based on their objective performance on total words written and correct writing sequences.

High student acceptability rates for choice and high rates of students reporting they would like choice of writing topic implemented more frequently in their classrooms could be related to autonomy. Grolnick and Ryan (1987) reported higher student interest levels and higher academic performance when students were given autonomy over parts of their learning experience. In the current study, students experienced the illusion of autonomy, wherein they were given a choice of topic but were not given the choice of activity. All students wrote stories, but students were exposed to a limited amount of autonomy over what topic they wrote about. Despite limited practical performance gains with regard to total words written and correct writing sequences when given a choice of topic, students overwhelmingly endorsed choice as a desired part of writing.

Students reported their objective performance with much higher accuracy than originally hypothesized. This finding indicates students may be aware of their skill level, which lends support to results of the social validity survey. If students were able to accurately report performance, it is likely they responded accurately to other social validity questions as well. In
addition, students reported selecting their story for reasons directly related to perceived competence in the prompt (i.e., “I had a good idea for the story” or “I thought I could write an interesting story”) as opposed to more trivial factors. This indicates students may have considered their level of confidence in their performance on a specific prompt more than peer influences or simply selecting the first prompt they were exposed to. The self-awareness inherent in accurately reporting performance may also have contributed to student rationale for selecting their prompts.

Limitations

One limitation with the current study involves the school population. Students participating in this study attended a rural elementary school with a relatively high percentage (35%) of economically disadvantaged children (Tennessee Department of Education, 2016). In addition, there was a lack of racial diversity in the sample. While results of the demographic questionnaire were unreliable, 82.2% of students in the school as a whole are white, while 17.8% of students come from minority backgrounds (Tennessee Department of Education, 2016). When compared to national normative data for total words written, students in this sample fall below the 25th percentile across all grades. Therefore, results of the current study may not be generalizable to more affluent or high achieving schools. However, existing normative data does not include a large enough sample size (10,194) or a representative sample of student writing performance nationwide to compare with the current sample.

A second limitation involves parental consent. As it was necessary to collect parent consent for individual students, response rates were limited. Overall, consent was obtained for 196 of 331 students, or 59% of third, fourth, and fifth grade students. Students who do not return parental consent forms may be of minority backgrounds, have less educated parents, and may be
experiencing more problems in school than those who return parent consent, which limits variability in data analysis (Dent et al., 1993; Tigges, 2003).

Lastly, proving prompt equivalency is an impossible task, as it relies on each individual’s reaction to the prompt itself. While all efforts were made to ensure prompts were as equivalent as possible (i.e., similar reading level, similar number of words), true prompt equivalency is based on the individual participant. It is fully plausible some participants received a choice between two prompts that were highly desirable to them, and some participants received a choice between two prompts where neither was desirable. This potential mismatch of prompts may impact student performance on choice and no choice tasks. There is no guarantee every participant responded equally to each prompt presented to them. During data collection, it was noted a limited number of students reported they did not have a best friend or did not have a television in their house, which would limit their ability to demonstrate their writing skills. However, all efforts were made to ensure prompt equivalency.

Directions for Future Research

The results of the current study allow for many areas of future research. First, researchers should focus on replicating this study with more diverse students, both racially, economically, and academically. If results were replicated, it would increase the generalizability of the current results. In addition, researchers should include students with different special education eligibility criteria to determine whether choice differentially impacts students of varying disabilities.

A repeated measures, longitudinal study would allow for researchers to more closely monitor the impact of choice on student performance over time. An alternating treatments design could illuminate the differential impact of choice over a longer period of time on a variety of
writing styles, including narrative and content-based prompts. In addition, researchers could examine whether a student responds positively to choice prior to beginning an intervention to ensure student acceptability of the intervention. The current study addressed a gap in the literature by examining the impact of choice of writing prompt on elementary school students, while all previous studies focused on a high-achieving high school population. However, a gap still exists with the middle school population. Future research should investigate the effects choice of prompt has on middle school students, both with narrative and content-based writing prompts.

**Overall Implications**

Results of the current study revealed choice of topic had an overall positive impact on both student writing production, as measured by total words written, and writing quality, as measured by correct writing sequences. These differences were noted for third and fifth grade students, but were not found for the fourth grade students in this sample. While these differences were statistically significant, they hold little practical value. In addition, 92.9% of students reported they enjoyed being given a choice of writing prompt, and 82.1% of students advocated for choice being used in their classrooms more frequently. If allowing students a choice of writing topic results in longer stories, and students report a preference for choice, even gains of several words are beneficial. Students who are not actively engaged in the writing process tend to view writing as an impossible task and avoid practicing this important skill (Graham & Harris, 2010). Any simple adaptation to traditional writing practices that allows students the opportunity to enjoy the writing process and has the potential to create even small gains in performance is worth implementing in a classroom.
List of References


Appendix A
Parent Consent Form

Parent Informed Consent Form
Evaluating Variations on Writing Prompt Administration

Purpose of the Research:
This research project will examine the impact of different writing assessment styles to help students demonstrate their best writing skills. Good measures of writing skills are crucial to ensure students receive the academic supports they need.

Procedure:
I understand that if I give permission for my child to participate in this research project, he/she will be asked to write two essays during school hours, which will take no more than 15 minutes each. My child will take a short survey asking them their opinions of the activities. All students in your child’s class will take part in the writing activities. We are asking your permission to use your child’s data in our research project.

Risks and/or Discomforts:
Participation in the study poses no known risks to your child. We will monitor your child for frustration levels while writing and provide frequent breaks, if needed.

Benefits:
Through your child’s participation, you will be helping us to learn more about the conditions that enable students to do their best writing. Additionally, these data could influence writing prompt administration procedures at your child’s school.

Confidentiality:
Any information gathered during this study, which may identify your child, will be kept strictly confidential. We will provide your child a research code so his/her name will not be connected to his/her writing. The information obtained in this research may be published in scientific journals or presented at professional meetings, but data reported will not identify any individual participant.

Contact Information:
If you have questions at any time about the study or the procedures, you may contact the researcher, Dr. Merilee McCurdy - 520 Bailey Education Complex or 865-974-8144. If you have questions about your rights as a participant, contact the Office of Research Compliance Officer
at (865) 974-7697.

Parent’s Initials _________

**Freedom to Withdraw:**
Your child’s participation in this study is voluntary. You are free to decide for your child not to participate in this study or to withdraw your child’s participation at any time without adversely affecting your relationship with the investigators or the University of Tennessee - Knoxville or at your child’s school. Your decision will not result in any loss of benefits to which you are otherwise entitled.

**Participation:**
Your child’s participation in this study is voluntary; you may decline for your child to participate without penalty. If you decide that your child should not participate, you may withdraw him/her from the study at anytime without penalty and without loss of benefits to which your family is otherwise entitled. If you withdraw your child from the study before data collection is completed, your child’s data will be returned to you or destroyed.

__________________________________________________
Child’s name – printed

__________________________________________________
Signature of parent/guardian date
Hello, my name is Victoria VanMaaren. I'm a researcher at the University of Tennessee. Your guardian/parent and your teacher say you might be willing to help me with a research project. If you agree to help me, we are going to work on a few things together today. We will work on two essays that will take about 5 minutes each. I will also have a survey for you to fill out that will ask you about your opinions of the essays you wrote today.

Are you willing to help me with this project? (circle one) YES  NO

If you chose yes, I think you will find this fun to do. If you decide that you don't want to do this anymore, all you have to do is tell me.

I appreciate your help!

If you sign this form, it means you have decided to help me with this research project.

_________________________________________
Signature of student

_________________________________________
Signature of researcher
Appendix C
Demographics

My name: ____________________________________

My age: ____________

My gender:

-Male ______
-Female _____
-Prefer not to answer _____

My race/ethnicity:

-White/Caucasian _____
-African American _____
-Hispanic/Latino/a _____
-Asian American _____
-I don’t know _____
Appendix D
Example – Choice Prompt Presentation

1.) The best thing about summer is…

2.) My favorite TV show is…
Appendix E
Example – No Choice Presentation

1. At recess, I like to...

2. My best friend and I like to…
Appendix F
Social Validity Measure

1. When you got to pick your story, circle the one you chose.
   - If I had $100, I would…
   - If I were invisible, I would…
   - I was playing outside when a spaceship landed and…
   - The best vacation I ever took was…

2. Why did you choose that story? Circle the most important reason.
   - I thought I could write an interesting story.
   - I thought of a funny story about the topic.
   - My friend chose it.
   - I had a good idea for a story.
   - I didn’t like any of the other options.
   - Other: ________________________________

3. Did you like having a choice of what you wrote about?
   - Yes
   - No

4. Would you like your teachers to allow you to choose what you write about more often?
   - Yes
   - No

5. Do you think you wrote more words when you had a choice?
   - Yes
6. Do you think you wrote a better story when you had a choice?

- Yes
- No
Appendix G
Script – Assent and Demographics

1. Introduce researchers. Say “Hello! Our names are (introduce researchers present) and we are students at the University of Tennessee. We are here today because we need your help for a research project that we’re doing”.

2. Hand out packet to each student (in manila folder)

3. Give the following instructions:

   “Please take the packet out of the folder. First, you have a copy of a permission form that we would like you to sign. Everyone will participate, and if you will let us use your information for our project and to help other students, please circle yes. We promise to keep what you write a secret. We will never tell anyone your name or even this school’s name. No one will know it was you who wrote a story. If you do not want us to use your information, you can circle no. Once you have circled yes or no, please sign your name on the line. (pause to allow students to complete these).”

4. Once all students have completed assent, say: “Please turn the page. You’ll see a page that asks you a couple questions about yourself. We’re going to go through these questions together and I will read each question to you.”

   “The first question asks you your name. Please put your first and last name here. We will remove your name before we leave your school today.”

   “Next, we would like to know your age. Please write your age on the line.”

   “The third question asks you your gender. You have three options: male, female, or prefer not to answer. Please put a check or an X on the line that best describes you.”

   “The last question asks your race/ethnicity. For this question, there are five options: white/Caucasian, African American, Hispanic/Latino(a), Asian American, Other or I don’t know. Please put a check or an X on the line that best describes you.”

5. Once all questions have been administered, say: “Thank you for filling out this survey!”
Appendix H
Script – No Choice/Choice Administration

1. Read the following instructions: “Please turn the page. I need you all to listen very carefully, because there are a lot of directions here. Everyone has multiple story topics at the top of their page – some of you have one that is circled. If you have a story topic circled, you will be writing about that. If you do not have a story topic circled, you are free to choose which story you would like to write about. Please take a minute to read over the options and make your choice by circling the one you want to write about. If you have a topic circled, please read both topics but write about the one that is circled. I will read each topic out loud for you – you will not have every topic I read on your page, so please follow along. (Read four story prompts: “The best thing about summer is…”, “My favorite TV show is…”, “At recess, I like to…” and “My best friend and I like to…”)

2. Walk around and monitor students making their choices. After students have made a choice, say: “I want you to write a story. Do your best work. If you don’t know how to spell a word, you should guess. Use the words at the top of your paper as your first sentence. Are there any questions? For the next minute, think about your story.” Begin timing.

3. If students start writing, instruct them to “Wait until I tell you to begin writing.”

4. After 30 seconds say, “You should be thinking about the story you are going to write about your prompt.”

5. After 1 minute say, “Begin writing.” (Continue timing with the stopwatch, out of view of the students) Walk around the classroom to ensure the students are writing.

6. After 90 seconds, say, “You should be writing about your story prompt.”

7. After 3 minutes, say, “Please circle or underline the last word or punctuation mark that you wrote and continue writing your story.”

8. After 5 minutes, say, “Stop and put your pencils down.”

9. Instruct students to turn the page, and say “We are going to write one more story with the same directions. Everyone has multiple story topics at the top of their page – some of you have one that is circled. If you have a story topic circled, you will be writing about that. If you do not have a story topic circled, you are free to choose which story you would like to write about. Please take a minute to read over the options and make your choice by circling it the one you want to write about. If you have a topic circled, please read both topics but write about the one that is circled.

10. Repeat steps 2-8
## Appendix I

### Integrity Checklist – Assent and Demographics

<table>
<thead>
<tr>
<th></th>
<th>Assent and Demographics Administration Integrity Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduce researchers.</td>
</tr>
<tr>
<td>2</td>
<td>Give each student a packet.</td>
</tr>
<tr>
<td>3</td>
<td>Read instructions about assent following script.</td>
</tr>
<tr>
<td>4</td>
<td>Instruct students to turn the page to demographics.</td>
</tr>
<tr>
<td>5</td>
<td>Read question about NAME</td>
</tr>
<tr>
<td>6</td>
<td>Read question about AGE</td>
</tr>
<tr>
<td>7</td>
<td>Read question about GENDER</td>
</tr>
<tr>
<td>8</td>
<td>Read question about RACE/ETHNICITY</td>
</tr>
<tr>
<td>9</td>
<td>Thank students for completing survey</td>
</tr>
</tbody>
</table>
Appendix J
Integrity Checklist – Choice/No Choice Administration

<table>
<thead>
<tr>
<th></th>
<th>Choice/No Choice Administration Integrity Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Read instructions about Choice vs. No Choice</td>
</tr>
<tr>
<td>2</td>
<td>Read instructions about “I want you to write a story…”</td>
</tr>
<tr>
<td>3</td>
<td>Begin timing for 1 minute</td>
</tr>
<tr>
<td>4</td>
<td>After 30 seconds, say “You should be thinking about…”</td>
</tr>
<tr>
<td>5</td>
<td>Stop timing after 1 minute</td>
</tr>
<tr>
<td>6</td>
<td>Say “Begin writing”</td>
</tr>
<tr>
<td>7</td>
<td>Start timer for 5 minutes</td>
</tr>
<tr>
<td>8</td>
<td>After 90 seconds, say “You should be writing about…”</td>
</tr>
<tr>
<td>9</td>
<td>After 3 minutes, say “Please circle or underline…”</td>
</tr>
<tr>
<td>10</td>
<td>After 5 minutes, say “Stop and put your pencils down”</td>
</tr>
<tr>
<td>11</td>
<td>Instruct students to turn the page and say “We are going to write one more story…”</td>
</tr>
<tr>
<td>12</td>
<td>Begin timing for 1 minute</td>
</tr>
<tr>
<td>13</td>
<td>After 30 seconds, say “You should be think about…”</td>
</tr>
<tr>
<td>14</td>
<td>Stop timing after 1 minutes</td>
</tr>
<tr>
<td>15</td>
<td>Say “Begin writing”</td>
</tr>
<tr>
<td>16</td>
<td>Start timer for 5 minutes</td>
</tr>
<tr>
<td>17</td>
<td>After 90 seconds, say “You should be writing about…”</td>
</tr>
<tr>
<td>18</td>
<td>After 3 minutes, say “Please circle or underline…”</td>
</tr>
<tr>
<td>19</td>
<td>After 5 minutes, say “Stop and put your pencils down”</td>
</tr>
</tbody>
</table>
1. Say: “Please turn to the last page in your packet!”

2. Give them the following instructions:

“Thank you so much for doing your best writing! Now, I have a few questions about the writing activity you just did. Please answer truthfully. We are going to go through each question together as a class and I will be reading each question to you.”

3. Administer question 1: “When you had a choice, which story did you choose? Remember you wrote two stories and you were able to pick one! Which one did you pick? Please circle it.”

4. Administer question 2: “Why did you choose that story? Pick the most important reason. I know that some of you may have more than one reason why you chose a story, but please pick the reason that was the most important to you. Your choices are:”

5. Administer question 3: “Did you like having a choice of what you wrote about? Circle yes or no based on your opinion”

6. Administer question 4: “Would you like your teachers to allow you to choose what you write about more often? If you would like to choose your writing prompts more often, pick yes. If you would not like to choose your writing prompts, circle no.”

7. Administer question 5: “Do you think you wrote more words when you had a choice? If you think you wrote a longer story when you were able to pick your topic, circle yes. If you think you wrote a shorter story when you picked your topic, circle no.”

8. Administer question 6: “Do you think you wrote a better story when you had a choice? If you think you did better writing when you picked your topic, circle yes. If you think you did poorer writing when you picked the topic, circle no.”

9. Thank students for participating and collect surveys.
Appendix L  
Integrity Checklist – Survey Administration

<table>
<thead>
<tr>
<th></th>
<th>Social Validity Administration Integrity Checklist</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Instruct students to turn the page for the social validity survey.</td>
</tr>
<tr>
<td>2</td>
<td>Read instructions about “thank you for doing your best writing, please answer truthfully”</td>
</tr>
<tr>
<td>3</td>
<td>Read question 1: “Which story did you choose?”</td>
</tr>
<tr>
<td>4</td>
<td>Read question 2: “Why did you choose that story?”</td>
</tr>
<tr>
<td>5</td>
<td>Read question 3: “Did you like having a choice?”</td>
</tr>
<tr>
<td>6</td>
<td>Read question 4: “Would you like your teachers…?”</td>
</tr>
<tr>
<td>7</td>
<td>Read question 5: “Do you think you wrote more words…?”</td>
</tr>
<tr>
<td>8</td>
<td>Read question 6: “Do you think you wrote a better story…?”</td>
</tr>
<tr>
<td>9</td>
<td>Thank students for participation.</td>
</tr>
</tbody>
</table>
Appendix M
Principal Approval Letter

Alpha Elementary School

The Primary
5020 Old Hwy. 11-E
Morristown, TN 37814
Phone (423) 585-3440
Fax (423) 585-3741

Dr. Kimberly Dyke, Principal
Misty House, Assistant Principal

The Intermediate
5620 Old Hwy. 11-E
Morristown, TN 37814
Phone (423) 585-3332
Fax (423) 585-3737

August 23, 2017

Victoria VanMaaren
University of Tennessee
535 Bailey Education Complex
1122 Volunteer Boulevard
Knoxville, TN 37996

Dear Ms. VanMaaren,

As Principal of Alpha Elementary School of Hamblen County Schools, I look forward to the opportunity to work with your research team. Your research project addresses questions about academic writing that can be useful not only for our district, but for other schools across the country. Many children have difficulty with writing and it is important to understand how teachers may increase writing production and practice among students.

I give my permission for this project and hope to find ways to collaborate in the future.

Dr. Kimberly Dyke
Principal
Alpha Elementary School

"A World-Class Education - Right Here At Home"
Appendix N
County Approval Letter

REQUEST FOR PERMISSION TO CONDUCT RESEARCH
IN HAMBLEN COUNTY SCHOOLS

1. Name and mailing address of the researcher(s):
   Victoria VanMaaren
   535 Bailey Education Complex
   1122 Volunteer Boulevard
   Knoxville, TN 37996

2. Daytime phone: 585-354-6446  Fax: 865-974-0135

3. Position(s) of the principal researcher:
   ___ undergraduate student  X  graduate student  ___ college professor
   specify institution: University of Tennessee
   ___ Hamblen County employee; specify location
   specify location:
   ___ other; specify occupation and affiliated institution, if any:

4. Exact title of the proposed study:
   An Investigation into Choice as a Variation of CBM Writing Prompt Administration

5. Attach the following items:
   A. Brief description of the proposed study, which is not limited to but must include:
      (1) purpose;
      (2) targeted population—who and how many; (3) data collection procedures; (4) estimated time
      required by Hamblen County Schools participants; and (5) projected value of the study to Hamblen
      County Schools, if any
   B. Single copies of all questionnaires, surveys, tests, answer sheets, structured interviews, or other
      instruments that will be used by Hamblen County Schools participants
   C. Single copies of cover letters, copies of instructions, parent permission statements (for student
      participation), etc.

6. Approximate proposed dates for
   Data collection will take place between December 2017 and February 2018
   beginning and ending the study:

Above material should be mailed or faxed to:
Director of Schools
Hamblen County Schools
210 East Morris Boulevard
Morristown, TN 37813
Fax: (423) 586-7747

APPROVED:*

Heidy Clement
Director, Hamblen County Schools

DATE: September 5, 2017

* Prior to approval, a personal interview may be required to clarify information provided.

NOTE: Participation will be at the discretion of the principal and voluntary on the part of students and parents.

[6:4901]
Form 68

participation at
principal Dyke's
discretion as
Table P1. Potential prompt combinations.

<table>
<thead>
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<th>Choice Condition</th>
<th>No Choice Condition</th>
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<td>Story Prompt Combinations</td>
<td>Story Prompt Combinations</td>
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<tr>
<td>A-B (B-A)</td>
<td>C-D (D-C)</td>
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<td>B-D (D-B)</td>
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<td>A-D (D-A)</td>
<td>B-C (C-B)</td>
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<td>B-C (C-B)</td>
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<td>A-C (C-A)</td>
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<td>C-D (D-C)</td>
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Table P2. Total Words Written (Descriptive Statistics)

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<th>Conditions</th>
<th>3 Minutes Mean (SD)</th>
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<tr>
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<td>No Choice</td>
<td>28.8 (13.04)</td>
<td>44.8 (19.46)</td>
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Table P3. Correct Writing Sequences, Incorrect Writing Sequences, and Percent Correct Writing Sequences (Descriptive Statistics)

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<th>ICWS</th>
<th>% CWS</th>
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<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
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<tr>
<td>Choice</td>
<td>44.8 (21.14)</td>
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<td>85.8 (15.82)</td>
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<td>No Choice</td>
<td>42.0 (20.38)</td>
<td>6.3 (6.64)</td>
<td>86.1 (14.01)</td>
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Table P4. Total Words Written by Gender (Descriptive Statistics)

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<tbody>
<tr>
<td>Choice</td>
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<tr>
<td>No Choice</td>
<td>40.6 (18.36)</td>
<td>48.5 (19.66)</td>
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Table P5. Correct Writing Sequences by Gender (Descriptive Statistics)

<table>
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<tr>
<th>Conditions</th>
<th>Males</th>
<th>Females</th>
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<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Choice</td>
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Table P6. Repeated Measures ANOVA by Gender (Total Words Written)

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<td>Error</td>
<td>193</td>
<td>165.198</td>
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Table P7. Repeated Measures ANOVA by Gender (Correct Writing Sequences)

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Table P8. Repeated Measures ANOVA by Grade (Total Words Written)

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<td>157.116</td>
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Table P9. Total Words Written by Grade (Descriptive Statistics)

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<th>Conditions</th>
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<th>Fourth</th>
<th>Fifth</th>
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<tbody>
<tr>
<td>Choice</td>
<td>38.8 (15.66)</td>
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<td>63.9 (16.48)</td>
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<tr>
<td>No Choice</td>
<td>34.2 (12.30)</td>
<td>44.7 (18.29)</td>
<td>57.0 (20.45)</td>
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Table P10. Repeated Measure ANOVA by Grade (Correct Writing Sequences)

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Table P11. Correct Writing Sequences by Grade (Descriptive Statistics)

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<th>Fourth</th>
<th>Fifth</th>
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<tbody>
<tr>
<td>Choice</td>
<td>36.4 (16.37)</td>
<td>38.0 (19.44)</td>
<td>62.1 (17.46)</td>
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<tr>
<td>No Choice</td>
<td>30.8 (12.74)</td>
<td>41.1 (18.22)</td>
<td>55.8 (21.76)</td>
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Table P12. Social Validity Related to Total Words Written (Descriptive Statistics)

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<th>Responses</th>
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<th>Fewer Words</th>
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<tr>
<td></td>
<td>Count (%)</td>
<td>Count (%)</td>
</tr>
<tr>
<td>More Words</td>
<td>82 (41.8%)</td>
<td>26 (13.3%)</td>
</tr>
<tr>
<td>Fewer Words</td>
<td>42 (21.4%)</td>
<td>46 (23.5%)</td>
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</table>
Table P13. Social Validity Related to Correct Writing Sequences (Descriptive Statistics)

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<tr>
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<td>Count (%)</td>
<td>Count (%)</td>
</tr>
<tr>
<td>Better Story</td>
<td>92 (46.9%)</td>
<td>19 (9.7%)</td>
</tr>
<tr>
<td>Poorer Story</td>
<td>61 (31.1%)</td>
<td>24 (12.2%)</td>
</tr>
</tbody>
</table>
Vita

Victoria VanMaaren was born in Rochester, New York and grew up in Honeoye Falls, New York. She graduated with a B.A. in Psychology with a minor in Spanish from Lipscomb University in May 2014. In August 2014, Victoria began her doctorate in the University of Tennessee School Psychology program. Victoria graduated with a M.S. in Applied Educational Psychology from the University of Tennessee in May 2017. She will graduate with her Ph.D. in School Psychology in August 2019 following a year-long internship placement with Lenoir City Schools as part of the Tennessee Internship Consortium.