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Exploring the amount and type of writing instruction during language arts instruction in kindergarten classrooms.

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Abstract The objective of this exploratory investigation was to examine the nature of writing instruction in kindergarten classrooms and to describe student writing outcomes at the end of the school year. Participants for this study included 21 teachers and 238 kindergarten children from nine schools. Classroom teachers were videotaped once each in the fall and winter during the 90 min instructional block for reading and language arts to examine time allocation and the types of writing instructional practices taking place in the kindergarten classrooms. Classroom observation of writing was divided into student-practice variables (activities in which students were observed practicing writing or writing independently) and teacher-instruction variables (activities in which the teacher was observed providing direct writing instruction). In addition, participants completed handwriting fluency, spelling, and writing tasks. Large variability was observed in the amount of writing instruction occurring in the classroom, the amount of time kindergarten teachers spent on writing and in the amount of time students spent writing. Marked variability was also observed in classroom practices both within and across schools and this fact was reflected in the large variability noted in kindergartners' writing performance.

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Introduction

Being literate includes the ability to read and to write and both are important to survive successfully in today's world (Graham, Gillespie, & McKeown, 2012). Poor written communication skills limit access to college and limit success in the work place as effective written communication is increasingly used to judge performance. In school, written expression is required not only in language arts but also to participate in content area coursework and most often grades are based upon written tests. Thus, it is concerning that the National Assessment of Educational Progress revealed that the majority of students in fourth, eighth, and twelfth grade demonstrated below grade writing proficiency (NAEP, 2007). Despite the importance of writing and concerns over student writing performance which led to recommendations by the National Commission on Writing (2003) that writing instruction be more prominent, writing has not been the focus of reforms such as No Child Left Behind, although writing has more prominence within the Common Core Standards Initiative (2010). The goal of the present study was to observe the amount of these types of writing instruction kindergarten children received and to describe the extent to which they met recommended teaching guidelines and benchmarks at the end of kindergarten.

Classroom writing instruction

Compared to studies examining classroom reading instruction, much less is known about classroom writing instruction (see Edwards, 2003 for a review). Most of our knowledge regarding classroom writing instruction comes from teacher surveys, rather than from direct observation (Cutler & Graham, 2008; Gilbert & Graham, 2010; Graham, Harris, Fink-Chorzempa, & MacArthur, 2003; Graham et al., 2008). For example, Cutler and Graham surveyed nearly 300 randomly selected first through third grade teachers to ascertain which writing instructional processes were used and with what level of frequency. Only 36 % of respondents reported using their core reading program to teach writing and a total of 65 % reported that they did not use any commercial programs. Most teachers (72 %) reported teaching writing using a combined process with direct skills approach. "The typical teacher placed considerable emphasis on teaching basic writing skills, as spelling, grammar, capitalization, and punctuation skills were reportedly taught daily with handwriting and sentence construction skills taught several times a week" (p. 915). The typical teacher also reported that about 1 h per day was dedicated to writing or writing instruction (roughly 50 % related to basic skills, 16 % to planning and revising, and 35 % on writing). Gilbert and Graham recommended that to improve primary grade writing instruction, teachers needed better training, and such training should aim to help teachers increase the amount of overall writing instruction, and also balance time more efficiently between writing instruction, time spent writing, and time spent

teaching writing strategies. However, the authors themselves noted that survey data should be augmented by observations of how much and what type of writing instruction occurs in classrooms. Data obtained from surveys may be less accurate than classroom observations when teachers provide socially desirable answers, as teacher may have a tendency to report what they hope or want to accomplish rather than report their actual classroom practices (see Dickinson & Tabors, 2001).

In the few studies that have included classroom observation of writing instruction, observations have primarily focused on practices of exceptional reading teachers and have mostly been conducted with older students (e.g., Pressley, Gaskins, Solic, & Collins, 2006; Pressley, Mohan, Bogaert, & Fingeret, 2005; Wray, Medwell, Fox, & Poulson, 2000). Although this type of information is important, the former (teacher surveys) might provide a biased and/or incomplete picture of the writing instruction that occurs in the classroom, whereas the latter (practices of exceptional primary grade teachers) does not provide information about the writing instructional practices of typical teachers. There have been a handful of studies examining writing practices in the classrooms, however, these generally involved observations in a small number of classes, were completed over three decades ago and were conducted with older children (Applebee, 1981; Bridge & Hiebert, 1985; Florio & Clark, 1982) where writing skills taught may be different from expectations of writing instruction in kindergarten classrooms. There have also been a series of qualitative observational studies of preschoolers' writing conducted by Rowe and colleagues (e.g., Rowe, 2008, 2010; Rowe, Fitch, & Bass, 2003). However, these studies focus less on instruction than describing the process of preschool children discovering their role as writer and as audience, and how this process unfolds through teacher- and peer-interactions during play and also art exploration. Thus, it would not be appropriate to generalize findings from these previous studies to kindergarten classrooms where more formal beginning language arts instruction occurs.

One recent exception is a study conducted by Hart, Fitzpatrick, and Cortesa (2010) who closely examined handwriting instruction in four inner city kindergarten classrooms using both classroom observations and teacher survey data. They reported that despite recommendations that handwriting instruction be provided to young children every day, handwriting instruction did not occur every day in the classrooms observed. Moreover, there was a lack of knowledge regarding best practices to teach handwriting and misconceptions among teachers about the importance of teaching children how to write in this day of technological advances. Whereas the study by Hart et al. addressed the limitations raised above regarding classroom observations of writing, their examination was confined to handwriting instruction and did not include other writing instruction taking place in the classroom. Further, it involved only four classrooms and generalization is limited as handwriting instruction was provided by an occupational therapist.

What writing skills are important in kindergarten?

Writing changes with development (Berninger & Chanquoy, 2011) as do the writing skills required to meet grade level expectations. In the early years or the learning to

write phase (similar to the learning to read phase), which spans kindergarten to second grade, children learn to write letters, spell words, and compose short texts (Berninger, Abbott, Whitaker, Sylvester, & Nolen, 1995). In the early stages of writing, not only do kindergarteners, who are learning how to write, need to know how to write letters; they need to write letters quickly and fluently without much conscious thought to the mechanics of forming letters. In addition they need to become fluent with translating phonemes to graphemes to enable them to spell words. Handwriting fluency (writing letters fluently in timed tasks) and spelling skills together which are generally referred to as transcription skills, consume significant amounts of cognitive energy, leaving few resources for higher-order writing processes, such as planning and composing text (Bourdin & Fayol, 1994, 2000; McCutchen, 1995; Olive & Kellogg, 2002). Underdeveloped, inefficient transcription processes have been shown to constrain writing fluency and quality (Bourdin & Fayol, 1994; Bourdin, Fayol, & Darciaux, 1996; Olive & Kellogg, 2002). Individual differences in transcription skills have been shown to predict writing achievement, particularly in primary grades (Graham & Harris, 2000; see also Graham, Berninger, Abbott, Abbott, & Whitaker, 1997 for a review) beginning as early as kindergarten (Puranik & Al Otaiba, 2012). Puranik and Al Otaiba found that that even after controlling for an array of cognitive-linguistic variables and student background characteristics, handwriting and spelling made unique contributions to kindergarten children's written expression. Therefore, young, emergent writers need instruction in transcription skills because "writing development is dependent on the mastery of transcription skills" (Graham & Harris, 2000, p. 10).

In March 2010, the Common Core State Standards for English Language Arts & Literacy was released with the goal of providing consistent and appropriate benchmarks for all students, regardless of where they live. Most pertinent to the present study are the benchmarks for written expression, which begin early. Specifically, by the end of kindergarten, students are expected to meet the following writing benchmarks: (a) print many upper- and lowercase letters, (b) write a letter or letters for most consonant and short-vowel sounds (phonemes), (c) spell simple words phonetically, drawing on knowledge of sound-letter relationships, (d) use a combination of drawing, dictating, and writing to write about experiences, stories, people, objects, or events. Current Common Core Standards are consistent with research findings regarding skills important for beginning writers. Thus, any writing instruction during this early phase must target those vital transcription skills that must be in place to enable children to write.

Current study

To summarize, to date, we have little information regarding teacher writing instructional practices for children in primary grades especially in kindergarten. As Gilbert and Graham (2010) so aptly noted, "One barrier to evaluating and implementing these and other recent suggestions for improving the teaching of writing (see also Writing Next; Graham & Perin, 2007a, b) is that there is presently little data on what writing instruction looks like in schools. This lack of information makes it difficult to determine clearly and precisely what needs to be done. It also

increases the probability of implementing proposed solutions that do not fit the most relevant problems” (p. 495).

Most of the information about teacher practices has been obtained from teacher surveys and not classroom observation. Based on the acknowledged importance of writing, concerns over the writing performance of school children, and recommendations that writing instruction start early, more research is needed to evaluate the amount and types of writing instruction being implemented in classrooms. Understanding what writing instruction takes place in the classroom is important because 75 % of school-age students achieve only partial mastery of grade-level writing, and only 1 % write at the advanced level (NEAP, 2007).

The present study extends previous work by closely examining the types and amounts of writing instruction within an economically and ethnically diverse sample of kindergarten classrooms within and across schools. We specifically chose to concentrate our observations in kindergarten classrooms for two primary reasons. First, because currently we have a dearth of information about kindergarten writing practices although formal writing instruction begins in kindergarten. Second, but perhaps most important, kindergarten is a time when students need instruction in the important transcription skills that lay the foundation for future writing development. Failure to provide young writers with effective early intervention is likely to lead to larger performance gaps as they progress through school similar to the Matthew effect in reading which hypothesizes that individual differences in critical early reading skills could result in cumulative positive or negative effects on reading performance in the later grades (Stanovich, 1986). Based on Common Core Standards and empirical research, we examined the types of handwriting, spelling, and writing instruction taking place in the classroom. Specific research questions include: (1) What is the overall nature—amount and types of kindergarten writing instruction? (2) Does writing instruction vary by kindergarten classroom and school? and (3) Is there variability in kindergarten writing performance across classrooms and schools?

Method

Sample and sites

This study was part of a large-scale project investigating the efficacy of Tier 1 core kindergarten reading instruction and involved 14 schools (44 classrooms, 556 students) that were nominated by the school district in a midsized city in northern Florida. These schools served an economically and ethnically diverse range of students but the percentage of the schools’ students who were identified as Limited English Proficient (LEP) was not typical for the state, ranging from less than 1 to 4.5 %. All schools provided full day kindergarten and, as increasingly typical in North American schools, there was a strong academic focus; district policy mandated a 90 min block for reading and language arts instruction using an explicit and systematic core reading program. Despite the diversity of the sample, end of the year letter word identification standard scores on the Woodcock Johnson-III (Woodcock, McGrew, & Mather, 2001) were slightly above the average range ($M = 104$).

Due to financial constraints, we could not assess writing or conduct classroom observations of writing for all students in the larger study, so we recruited roughly half of the teachers from nine out of the 14 schools in the larger study to explore differences in teachers' writing instruction during the language arts block and to describe the range of students' writing productivity. The schools participating in this study were similar to the larger study, and served students from a diverse range of socioeconomic status. Children qualifying for free and reduced lunch at these participating schools ranged from 8.2 to 92.6 %. Children attended a full-day kindergarten program which included 90 min of core reading. All classrooms used the same district mandated core reading program for instruction—*Open Court* (Bereiter et al., 2002); which provides systematic and explicit instruction in phonological awareness, phonics, vocabulary, and reading comprehension. Spelling and writing instruction were not a primary focus within this core reading program nor did any of the teachers report using a specific writing or spelling curriculum.

Participants

A total of 21 credentialed teachers, ranging from one to five teachers per school, agreed to participate in this subgroup analysis. A majority (14 teachers, 66.7 %) were Caucasian, 5 (23.8 %) were African American, and 2 (9.5 %) were Hispanic. Six teachers held graduate degrees (28.6 %) and the majority held bachelor's degrees (71.4 %). On average, teachers had taught for 10.14 years ($SD = 9.16$). There was only one first-year teacher, although 9 teachers reported having 0–5 years of teaching experience. One teacher reported having between 6–10 years, six had 11–15 years, and 4 had more than 15 years of teaching experience. A Chi square analysis revealed no significant difference across conditions: ethnicity, $\chi^2(2, 44) = 3.61, p = .17$; degree held, $\chi^2(1, 44) = 18.58, p = .20$; years teaching $\chi^2(19, 44) = 1.63, p = .48$.

A total of 238 kindergarten children participated in this study. The mean age of the participating kindergarteners at fall testing was 5.23 years ($SD = 0.38$; range 5–7 years). There were 101 females (42.4 %) and 133 males (55.9 %). It was an ethnically diverse sample with a breakdown as follows: Black/African American—64.7 %, Caucasian—32.4 %, Hispanic—1.6 %, and Asian—1.3 %. A majority of students (61.8 %) received free and reduced price lunch, which is a proxy for low socio-economic status. As part of the larger study, students were individually administered the Kaufman Brief IQ test (Kaufman & Kaufman, 2004) as a measure of cognition in the Fall of the kindergarten year. The mean IQ of the sample was within the normal range ($M = 92.29$; $SD = 14.85$).

Procedures

The writing assessment included a measure of spelling, handwriting fluency, and written composition, which were collected in the spring of the kindergarten year. These measures were administered in a whole-classroom format in one session by project RAs. RAs provided children primary-lined paper for each of the three writing tasks. Classroom teachers were present during the assessment and helped the RA as needed.

Writing measures

Our measures included assessments that would address critical aspects of early writing, namely the foundational transcription skills of handwriting fluency and spelling. Additionally, we examined written productivity. All three measures are line with Common Core Standards for kindergarten.

Spelling

A researcher generated list, used in prior literacy studies, was used to assess students' ability to spell single words (e.g., Al Otaiba et al., 2011; Byrne & Fielding-Barnsley, 1989; Byrne et al., 2006; Puranik & Al Otaiba, 2012). This list included 14 decodable, sight, and nonsense words (dog, man, plug, limp, tree, one, said, blue, come, went, ig, sut, frot, yilt). For the decodable and sight words, the RAs introduced the spelling task by reading the target word, providing the target word in a sentence, and repeating the target word. The nonsense words were repeated three times.

Instead of using a dichotomous scoring system, children's spelling was scored to account for age and developmental level. Children obtained points based on their ability to represent phonemes in their spelling. Scores for each word ranged from 0 to 6. A score of 0 was given when the child wrote a random string of letters or did not respond; (1) for writing a single phonetically related letter (e.g., for "dog" student wrote an "o" or a "g"); (2) for writing a correct first letter followed by other unrelated letters (e.g., "dib"); (3) when more than one phoneme was phonetically correct (e.g., "do"); (4) when all letters were represented and phonetically correct (e.g., "dawg"); (5) when all letters were represented and phonetically correct and the student made an attempt to mark a long vowel (e.g., for the word "blue" if the student wrote "blew" or "bloo"); (6) when the word was spelled correctly (e.g., "dog"). Internal consistency reliability for the spelling task was .93.

Handwriting fluency

To examine how well children access, retrieve, and write letters automatically, we employed a task used extensively in prior studies to examine handwriting fluency (Jones & Christensen, 1999; Hudson, Lane, & Mercer, 2005; Wagner et al., 2011). For this task, children were required to write all the letters in the alphabet in order in 1 min, using lowercase letters. We modified the scoring to account for the participants' age and developmental level; one point was awarded for each correctly formed and sequenced letter and a score of 0.5 was awarded for letters written in cursive or reversed, letters written out of order or uppercase letters. Scores ranged from 0 to 26.

Writing productivity

To examine students' ability to compose a brief text, children were asked to write about what they liked, did, or learned in kindergarten. The RAs first introduced the

task and facilitated a brief group discussion. Following the discussion, students were given 15 min to write. Children were not penalized or forced to write if they stopped writing before the end of the allotted time. Frequently young children attempt to spell words they do not know how to spell and their writing may be difficult to decipher for an unfamiliar reader. To avoid this problem, soon after administering the writing task, the RAs visually scanned all of the writing samples to ensure that they could be understood. If a word or words were not understood, either due to illegible writing or incorrectly spelled words, the RAs asked the students to read their samples. The RAs wrote the word the children intended to write below the incorrect spelling or illegible word written by the student.

The total number of words (TNW) in writing was calculated as a measure of written productivity because it has been shown to be a good predictor of writing quality (Scott, 2005). Moreover, it is the most widely used variable to document written productivity (Berman & Verhoeven, 2002; Nelson & Van Meter, 2002; Olinghouse & Graham, 2009; Puranik, Lombardino, & Altmann, 2008; Puranik & Al Otaiba, 2012; Wagner et al., 2011). TNW was the number of words produced in writing by the subject. Children were not penalized for incorrect spelling, however, words or phrases that did not pertain to the prompt such as “The end” were not included when calculating TNW. In rare instances, children wrote random words which were often copied from the spelling wall or what they saw around the classroom. These words were not accounted for either in the calculation of TNW.

Interrater reliability

For the handwriting fluency and spelling measures, two RAs were trained to use the rubric until they reached 100 % agreement. Interrater reliability was calculated by randomly sampling scores on both measures from 15 % of the data set. For the handwriting fluency scoring, interrater reliability was 99 % and Cohen’s kappa was .98; for spelling, interrater reliability was 94.75 % and Cohen’s kappa was .92. For the writing task, the first author and two trained RAs first outlined the scoring rules for calculating TNW. The two RAs then scored 40 writing samples to practice and discuss any issues with scoring. All writing samples were coded by both RAs. To ensure uniformity in scoring, approximately 20 % ($n = 48$) of the written samples were chosen to obtain a measure of interrater reliability. Interrater reliability for TNW was 88 %. Any discrepancies in scoring across the entire sample were resolved through discussion and the final score entered was the one the two RAs arrived at after consensus.

Classroom observation

The research team observed, videotaped, and coded the 90 min language arts block in fall (October) and winter (February). Videotaping sessions were scheduled at the teachers’ convenience within these months. Prior to each round of taping, research staff were trained during a 2-h group training session that reviewed the purpose of videotaping and provided examples of and guidance about taking detailed field notes about classroom instruction. In addition, staff learned to operate the

equipment. Two staff with two high-quality digital video cameras (Panasonic Model PV-DV102D and Sony Model DCR-TRV17) videotaped and captured the classroom activities. One camera was set on a tripod and strategically located so as to capture as much of the classroom as possible. The other camera was hand held by an observer in a corner of the classroom to capture group instruction and to follow participating children if they wandered out of range of the stationary camera. All cameras had high-quality microphones to capture the teachers' and students' voices. Video and audio recordings were supplemented by detailed field notes (either done online or soon after the observation) by the trained staff.

Videos were coded using the Noldus Observer Pro system (Noldus Information Technology, 2001), which permits direct coding of video. There were a total of four coders including one master coder. Coders were students, pursuing a graduate-level degree in education or speech-language pathology. The master coder had also participated as a videotaper. We used a coding scheme developed by Connor et al. (2009). This coding scheme is based on sound theoretical framework and has been used extensively in previous research. For more information regarding the classroom coding procedures and systems, readers are urged to refer to Connor et al. All videotapes for each classroom were viewed repeatedly as they were coded. Coders utilized information from field notes as needed to identify specific student and teacher activities.

Coders participated in a comprehensive training process conducted both in small groups and individually. First, coders were trained on the content of the manual through review. Second, the coders paired up with an experienced coder to observe the coding system. Third, the coder was assigned a tape to code independently. Next, reliability data was obtained using Cohen's kappa. The reliability for each coder was checked against a master coder and then the other coders. Coders could not code independently until a kappa of .75 was reached. The reliability of the coders ranged from .77 to .83 with a mean of .80. Coding meetings were held weekly to discuss any coding issue or questions about a specific activity. During the coding meetings disagreements were resolved by the master coder.

For the present study, classroom observations of writing (shown in Table 1) were divided into two broad categories: (1) Student-practice variables: students were observed practicing writing or writing independently, and (2) Teacher-instruction variables: teacher was observed providing direct writing instruction. The specific classroom variables observed were chosen to align with recommendations regarding good writing instruction such as the fact that effective teachers dedicate time to writing and to teaching writing which includes modeling and scaffolding, teaching writing strategies and processes, and providing students with time for independent work (e.g., Cutler & Graham, 2008; Graham & Perin, 2007a). Most recently, after an extensive review of the literature, Graham et al. (2012) made four primary recommendations for effective writing instruction for elementary grade students. Variables chosen for our classroom observations are in line with these four primary recommendations made by Graham et al. who proposed that teachers must provide students with opportunities to practice writing daily, teach students to use writing for a variety of purposes, teach students to become fluent with handwriting, spelling, and sentence construction, and that writing instruction be provided such that it

Table 1 Classroom observation of writing instruction

Classroom observation variables	Recommendations for effective writing instruction ^a
<i>Student-practice variables</i>	
(1) Student independent writing: when children were quietly writing a story, poem, or writing in their journals	Students write for a variety of purposes
(2) Mechanics: activities in which students practiced specific rules used in writing (e.g., functions of various punctuation marks, capitalization rules)	Students learn about the writing process
(3) Copying: activities involving the copying of words, phrases, or sentences	Students learn to become fluent with handwriting, spelling, and sentence construction
(4) Child editing: children were observed correcting their written work	Students learn about the writing process
(5) Student group writing: the children are working in pairs or small groups to produce a written product (such as a story)	Students learn to collaborate as writers
<i>Teacher-instruction variables</i>	
(1) Teacher models writing: the teacher, without input from the children, stands at the blackboard/easel and produces some sort of written product (it could be as small as a sentence). The intent of the writing must be to model the act of writing	Teach students the writing process
(2) Teacher editing: includes the time when the teacher is explaining or modeling the editing process and correcting a sample of written work	Teach students the writing process
(3) Handwriting instruction: includes the time when the teacher is providing instruction in good handwriting skills	Teach students to become fluent with handwriting, spelling, and sentence construction
(4) Spelling instruction: encoding activities in which the teacher directly addressed spelling, i.e., the teacher provided explicit instruction in letter sound correspondence	Teach students to become fluent with handwriting, spelling, and sentence construction
(5) Students watch teacher write: within the context of writing instruction, the students watch as the teacher writes on the board and the students are paying attention to the writing	Teach students the writing process
(6) Brainstorming: includes activities in which ideas for writing are generated. These activities may involve the teacher discussing the use of such brainstorming or students and/or the teacher engaging in such brainstorming	Teach students the writing process/create an engaged community of writers
(7) Teacher-directed group writing: the teacher is at blackboard/easel, working with children on a group writing activity. Children may offer the content of the written piece, but the teacher puts the ideas into complete sentences, with appropriate punctuation	Teach students the writing process/create an engaged community of writers

Table 1 continued

Classroom observation variables	Recommendations for effective writing instruction ^a
(8) Writing process instruction: activities in which the teacher instructs students in the format of good writing. For example, explaining the need for a main idea or the importance of sticking to a topic when writing	Teach students the writing process

^a Graham et al. (2012)

creates an engaged community of writers. Table 1 depicts how our coding system aligns with each of these four primary recommendations.

Results

Nature: amount and types of kindergarten writing instruction

Across the year, on average, students were engaged in literacy instruction for 53.02 min ($SD = 16.83$) of the 90 min language arts block. The largest proportion of time (38.4 % which translates to 19.6 min) was spent in teacher managed, code-focused instruction (which included explicit instruction in the alphabetic principle, phonological awareness, phonics, sight word reading, and some word-level reading fluency activities). In Fig. 1, we show the average amount of time spent on the various writing activities observed in the classroom during the 90 min language arts block. First, we show all writing instruction (Writing Total) averaged across student practice and teacher instructional variables observed in the classroom for fall and winter. Activities related to the five student-practice variables observed are listed next followed by activities related to the eight teacher-instruction variables.

As shown in Fig. 1, the average time spent across classrooms on all writing or writing-related activity across student-practice and teacher-instruction observations during the language arts block was 6.1 min in the fall and 10.5 min in the winter. Of the total writing time observed across classrooms, more time was spent on student practice than on teacher instruction. Almost all of that student-practice time was spent on students' writing independently. Most of the teacher-instruction time was spent on handwriting instruction. However, on average, this was less than 1 min in the fall semester and less than 2 min in the winter semester. On average, less than 1 min was spent on the following teacher-instruction variables: watching teacher write, teacher editing, brainstorming, process instruction, and teacher-directed group instruction both in the fall and winter semester.

Writing instruction across classrooms and schools

To address our second question regarding variability in writing instruction across classrooms and schools, we examined writing instruction by classrooms and schools

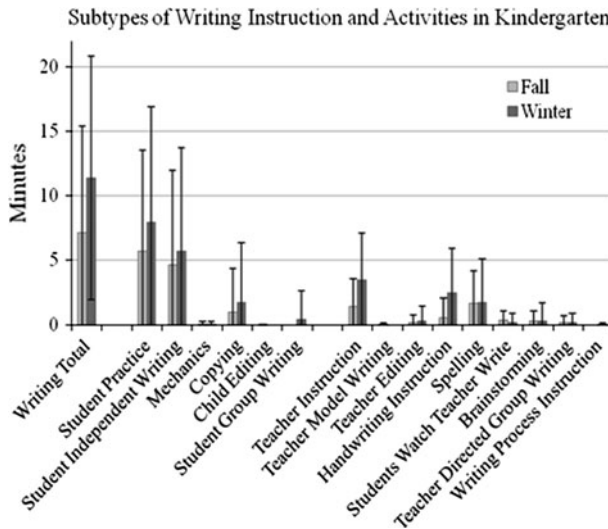


Fig. 1 Subtypes of kindergarten writing instruction in fall and spring

for fall and winter. Figure 2 shows the amount of student-practice and teacher-instruction variables averaged for fall and winter semester across classrooms and schools. The first line of numbers on the X-axis shows the 21 classrooms and the second line depicts the nine schools. As can be seen, large variability was noted in the total amount of time spent on student-practice variables across classroom and within and across schools.

Large variability was also noted in the amount of instruction provided by each teacher within and across schools. The amount of time spent on any writing instruction ranged from 0.00 min (teacher 52) to 8.86 min (teacher 131) minutes of which the amount of spelling instruction ranged from 0 min (teachers 11, 17, 52, 72, and 132) to 5.83 min (teacher 75). The amount of time students worked on writing activities independently ranged from 0 min (teacher 11) to 20.58 min (teacher 72).

As observed in teacher level and student level observations (Fig. 1), the student-practice variable in which the most amount of time was spent was students writing independently and the teacher-instruction variable in which the most amount of time was spent was handwriting instruction. To further examine individual differences across classrooms, we looked closely at the amount of time spent on these two variables—students writing independently and handwriting instruction across all classrooms. Figure 3 shows the amount of time students spent writing independently and amount of handwriting instruction in the 21 classrooms grouped by schools averaged across the two observations in fall and winter. Of the 21 teachers in this study, only 15 were observed to teach handwriting. Large variability was noted in the amount of time spent on handwriting instruction by teachers in a given school, from 0 (teachers 21, 52, 71, 72, 81, and 92) to 4.20 min. The amount of time students spent writing independently also varied by classrooms and within classrooms in the same schools. Students were not observed to engage in any independent writing activity in three out of 21 classrooms.

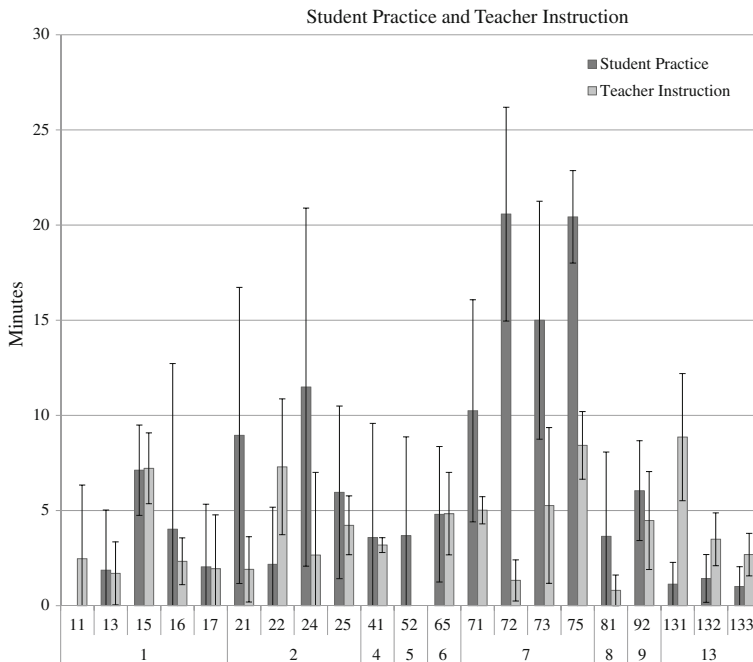


Fig. 2 Average amount of time spent on student-practice and teacher-instruction variables across schools and classrooms. *Note:* The first line of numbers on the X-axis represents the 21 teachers and the second line of numbers indicates the nine different schools

Writing performance by classroom

Figure 4 shows students' performance on the handwriting fluency and spelling task by classroom for the fall and spring observations. The mean for the handwriting fluency variable was 9.9 letters ($SD = 6.08$, range 0–26). Seven out of the 238 children in this study were not able to write a single letter and about 40 students wrote less than 5 letters in the handwriting fluency task. Performance differences were noted among classrooms; the average class scores on the handwriting fluency task ranged from 3.75 letters (classroom #52) to 15.45 letters (classroom #15).

The mean spelling score was 49.01 ($SD = 20.38$, range 0–82 out of a possible 84). Again there was a range of performance on the spelling task with several children being able to use initial and final letters to spell words, some children spelling most words correctly and some children unable to write any letters. On average, about 5–20 % of children either did not respond or wrote a random string of letters to spell words. The average class scores on the spelling task ranged from 17.80 (classroom #17) to 62.47 (classroom #81).

Figure 5 shows the descriptive data for TNW, a measure of writing productivity for each of the 21 classrooms. The mean score for TNW was 14.37 words ($SD = 15.62$, range = 0–90). There was large variability noted for TNW, with some children able to write only a few words to one child writing 90 words. There

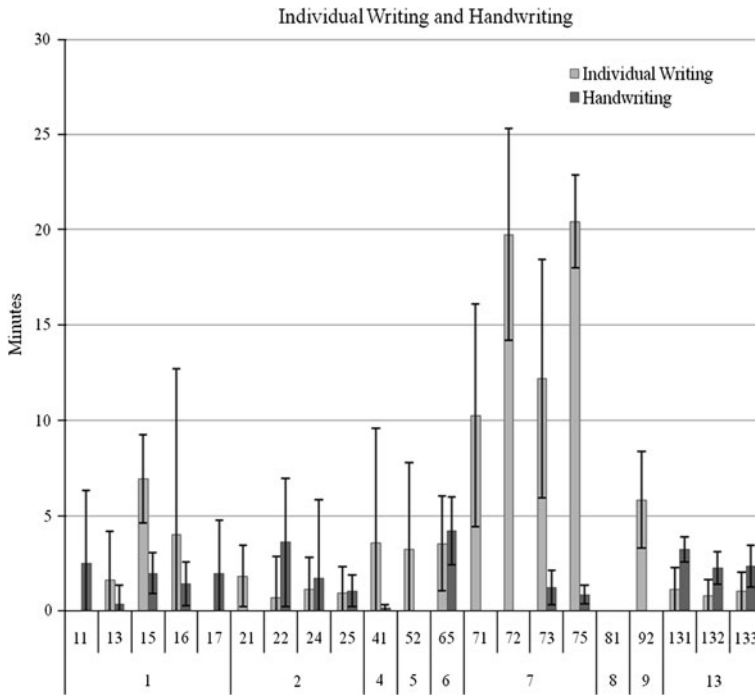


Fig. 3 Average amount of time spent on student independent writing and handwriting instruction by classrooms and schools

were some students who were not able to write a complete sentence. Similar to the variability noted in writing instruction across classrooms and schools, large variability was also noted among classrooms in writing performance, where the mean TNW ranged from 1.00 (classroom 92) to 51.38 (classroom #41).

Discussion

The overall purpose of this paper was to examine the nature (amount and types) of kindergarten classroom writing instruction and to explore the writing performance and instructional activities across kindergarten classrooms. These observations included classrooms where teachers had been observed to provide effective reading instruction as indicated by student reading data. Despite the fact that the data indicated that on average, students read on grade level, large variability was observed in the amount of writing instruction occurring in the classroom, the amount of time kindergarten teachers spent on writing and in the amount of time students spent writing. Marked variability was also observed in classroom practices both within and across schools and this fact was reflected in the large variability noted in kindergartners' writing performance.

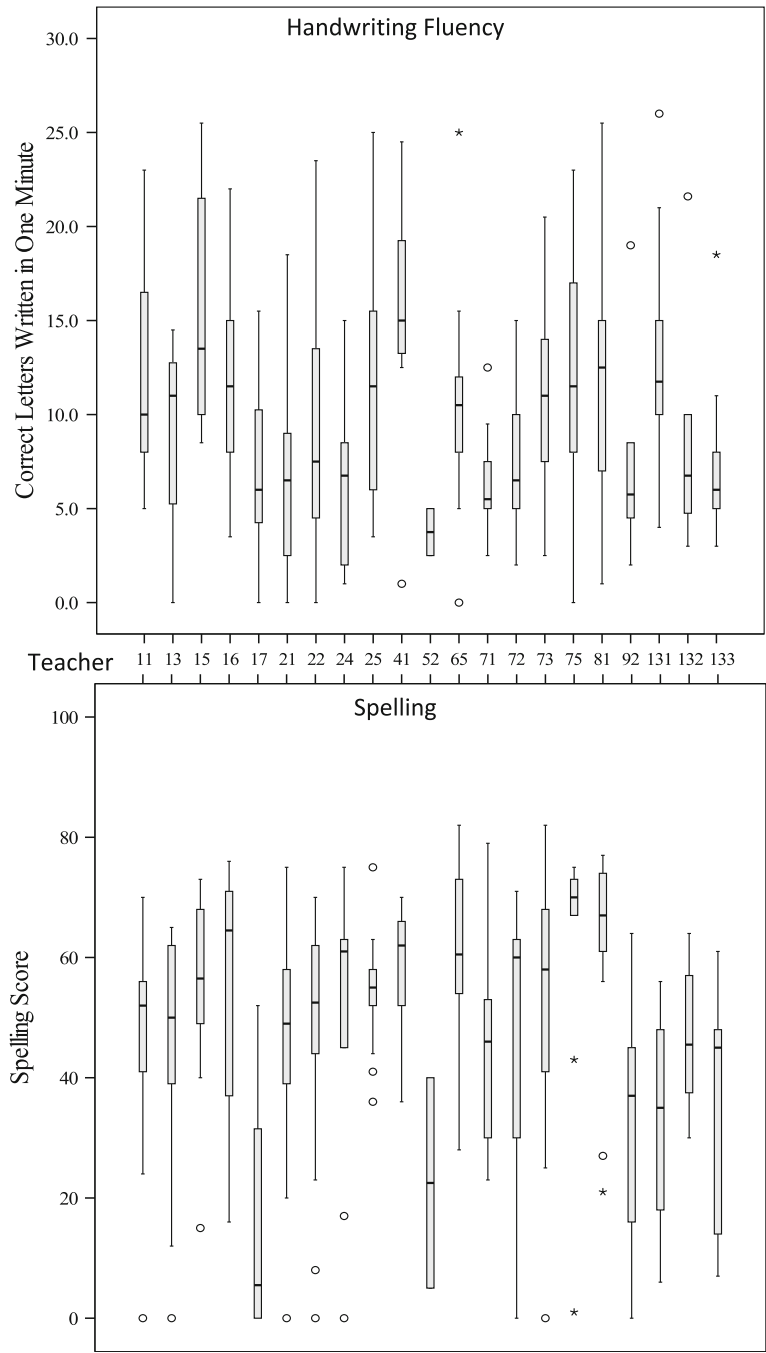


Fig. 4 Handwriting fluency and spelling by classroom/teachers

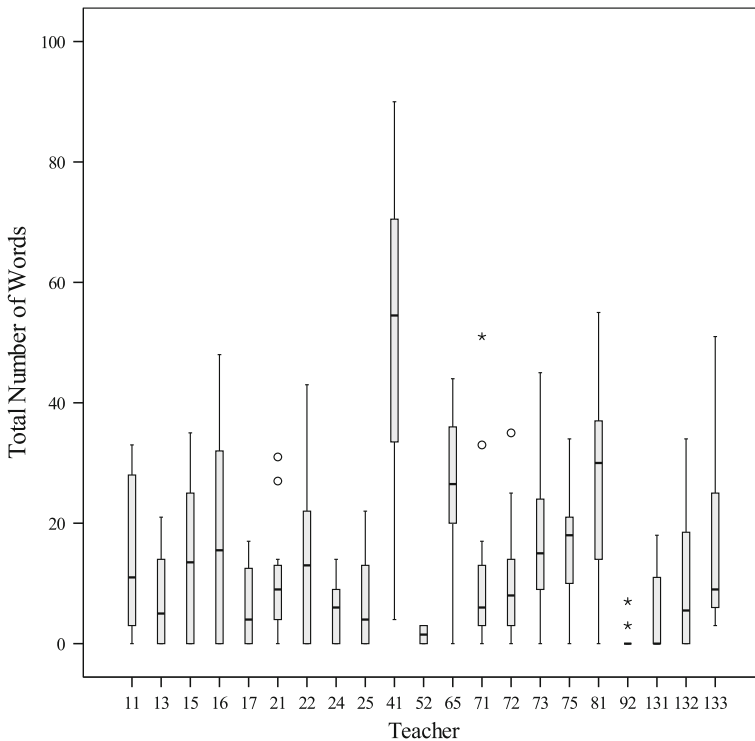


Fig. 5 Writing productivity (TNW) by classroom/teachers

Amount and type of writing instruction

Whereas we currently have Common Core Standards delineating what is expected of children when they complete kindergarten, there are no universal or standardized writing curricula that teachers can follow. As already mentioned, there was no specific writing curriculum being followed by any of the teachers. During the early years of schooling, children's classroom experiences should be providing them with a variety of basic writing skills. Our findings indicate that on average only 6.1 min in the fall and 10.5 min in the winter were spent on any kind of writing instruction during kindergarten language arts instruction. According to most recent recommendations (Graham et al., 2012), students in kindergarten should be spending at least 30 min each day writing and developing writing skills. Our observation of the writing instruction occurring in the classrooms was not in line with these recommendations. Surprisingly, most of the time spent on writing instruction was spent on students writing independently rather than on teachers providing instruction. This finding appears problematic because it is contrary to recommendations by writing experts who recommend that the teaching of writing in the primary grades should include a balance between teacher instruction and student independent writing (e.g., Cutler & Graham, 2008; Gilbert & Graham, 2010).

Whereas the need for effective writing instruction cuts across all grade levels, this need is more pronounced when children are first learning to write such as in kindergarten. Findings obtained from teacher surveys in previous studies indicate that in elementary school, on average teachers spend about 20 min a day on writing instruction (Cutler & Graham, 2008; Graham et al., 2003). Differences between findings could be attributed to at least two important reasons. First, is that in these previous studies, data were collected through teacher reports. Differences between observation of classroom practices and teacher reports could very well account for the discrepancies in the results. Second, in both of the studies by Graham and colleagues, results have been reported by elementary school teachers from first through third grades. It is possible that teachers spend more time on providing writing instruction in later elementary grades as opposed to kindergarten.

Despite the importance of teaching handwriting during the formative years, there were several classrooms where no systematic handwriting instruction was observed. Of the 21 teachers in our study, six were not observed to teach handwriting. Although only two formal videotaping sessions of instruction were conducted, recall that teachers were aware that the team was coming to observe. Additionally, research staff that had been present a minimum of once a month throughout the school year also confirmed these observed data. Further, teachers confirmed that writing and spelling instruction typically occurred during the language arts block. This observation is consistent with the numbers reported by Asher (2006) who reported that only three out of the 13 kindergarten to 6th grade teachers in her survey reported teaching handwriting daily. Although 15 out of the 21 teachers in our study taught handwriting, our findings indicate that on average less than 1 min per day was spent on handwriting instruction in the fall semester and less than 2 min per day in the winter semester. Our findings regarding the amount of time spent on handwriting instruction are not consistent with Hart et al.'s (2010) findings, who reported that the amount of time spent on handwriting instruction by kindergarten teachers was 23.3 min in the fall and 11.25 min in the winter. Our findings are not consistent with the survey data reported by Graham et al. (2008) either. In a national survey of 169 teachers from 1st through 3rd grade conducted by Graham et al., 90 % reported teaching handwriting averaging 70 min of instruction/per week. Hart et al.'s data were also obtained from teacher survey in contrast to classroom observations. Interestingly, Hart et al. reported that when they examined teacher logs and lesson plans, they saw no evidence of handwriting instruction as a separate block; instead direct handwriting instruction was provided once a week by an occupational therapist. Although not likely, it is also possible that we may have missed out on observations of handwriting instruction that took place outside of the language arts block. Conversations with teachers in our study did not indicate that this was a likely scenario. This fact was supported by observation from the research team members. In all cases, research observers reported that the videotaped classroom observations were representative of the informal observations conducted throughout the school year.

The general time recommended for handwriting instruction varies from 75 to 110 min per week (e.g., Graham & Miller, 1980; Troia & Graham, 2003). Additionally, research indicates that beginning writers benefit more from short but frequent practice (Graham & Miller, 1980; Graham et al., 2008), leading some

researchers to recommend that handwriting instruction take place every day, especially for beginning writers (Edwards, 2003; Graham et al., 2012; Jones & Christensen, 1999). Thus our finding regarding the amount of time spent on handwriting in the 21 kindergarten classrooms observed is not in line with suggested practice. Despite the fact that kindergarten is the time when children are learning to form and write letters of the alphabet, students do not appear to be receiving the optimal amounts of explicit and direct instruction needed. This is even more disconcerting in light of the fact that the ability to write letters fluently is one of the building blocks in learning to spell and write (Graham et al., 1997; Graham, Harris, & Fink, 2000; Puranik & Al Otaiba, 2012).

Another transcription skill that has been shown important for the development of writing skills is spelling. Troia and Graham (2003) have succinctly summarized procedures to teach spelling in primary grades which includes the recommendation that children receive 60–75 min of spelling instruction per week. Our observation of classroom writing indicates that teachers devoted less than 2 min providing spelling instruction which appear inadequate at best. Researchers working with older children have recommended that it is important to employ a multi-pronged approach to spelling instruction (Berninger et al., 1998; Graham et al., 2002; Moats, 2005–2006, Troia & Graham, 2003). These recommendations are similar to recommendations for teaching kindergarten children how to spell. Rieben, Ntamakiliro, Gonthier, and Fayol (2005) examined the effects of different spelling practices with French speaking kindergarten children. 145 children were assigned to three different conditions—one group practiced invented spelling (IS group), the other copied spelling (CS group), whereas the third group practiced invented spelling but received feedback on correct orthography (IFSB group). Their results indicated that children in the IFSB group had higher scores in the orthographic aspects of a words' spelling compared to the IS and CS group, but not on the phonological aspects of the word. The researchers concluded that the most effective practice was one that provided practice with invented spelling combined with exposure to the correct spelling and feedback on orthographic aspects of a word. This study provides further evidence that children, even beginning writers, need multi-faceted instruction to learn to spell.

There is very little research on instruction for specifically teaching composition skills to kindergarten children, however, the work of Berninger and her colleagues with older children (e.g., Berninger, 1999; Berninger et al., 1995) suggests that both lower order (handwriting and spelling) and higher order (composition) need to be emphasized simultaneously. Our observations of the classroom indicated no simultaneous instruction of lower and higher order writing skills was being provided. Moreover, minimal amount of time was spent on activities in which the teacher was instructing the children in higher order writing skills such as teachers instructing the students in writing process instruction, students watching the teacher write, teacher modeling writing, or teacher-directed group writing. A decade of research has demonstrated that a successful reading intervention provides explicit, intense, and supportive instruction (e.g., Snow, Burns, & Griffin, 1998; Coyne, Zipoli, & Ruby, 2006; Torgesen, 2002). For writing, at the very least, this would require explicit and intense instruction in handwriting and spelling skills in addition

to learning how to compose longer text. Writing requires the management and coordination of multiple cognitive-linguistic processes simultaneously (Berninger, 2008; Moats, 2005–2006) and is more difficult than reading (Juel, 1988). Thus, it stands to reason that writing too requires explicit, systematic, and sustained instruction for its mastery. Our results indicate that we need to step up our efforts to provide explicit, systematic, and sustained writing instruction in the classroom. Kindergartners would also likely benefit from opportunities to engage in centers that support writing practice through dramatic play or art-exploration activities; these child-, peer- or teacher-child managed interactions may support their motivation to write and to take on the role of writer (e.g., Rowe, 2010).

Writing instruction across classrooms and schools

The instructional quantity ratings from our observations of writing instruction suggest that there was large variation in writing instruction at the classroom level, which is consistent with findings reported by other researchers (e.g., Lipson, Mosenthal, Daniels, & Woodside-Jiron, 2000; Mehta, Foorman, Branum-Martin, & Taylor, 2005; Troia, Lin, Monroe, & Cohen, 2009). This means that even students attending the same school did not receive equivalent amounts and types of writing instruction. Differences in teacher training or lack of teacher training could be one factor contributing to the variability noted across classrooms and schools. Past research indicates that teachers are not trained adequately to teach writing (Bridge & Hiebert, 1985; Graham et al., 2008; Hart et al., 2010). For example in the Graham et al. study, only 12 % of teachers indicated that their college coursework adequately prepared them to teach handwriting. Thus, there is a general lack of knowledge regarding the most effective practices to teach writing. Furthermore, Graham et al. found that even among the teachers who reported teaching handwriting, practices varied significantly leading the authors to be concerned about the quality of handwriting instruction that students were receiving. Our results echo a similar concern at an even earlier stage. Research in the future would benefit from examining teacher knowledge and its effect on teacher practices. Analogous to the motivation behind the formulation of Common Core Standards, the lack of uniformity in writing practices raises the issue regarding the need for district-wide or even state-wide initiatives to ensure that instruction is consistent and begins early.

Writing performance across classrooms and schools

Large variability was also noted in children's performance in letter writing fluency, spelling, and written productivity. Whereas the publication of Common Core Standards can be viewed as a positive step toward providing guidelines, we still do not have specific benchmarks to evaluate students' writing performance. This makes evaluation of classroom writing performance problematic. Even so, our results indicate that there were students who are unable to write any alphabet letters and a significant proportion of students who wrote less than five letters in the handwriting fluency task. Several students were not able to spell or write even a sentence, which is a grade level expectation. Given the importance of teaching writing skills, all

students in the primary grades require writing instruction. However, this need may be more pronounced for students who show signs of struggle starting in the early years. These students would require greater teacher support and writing instruction so that they have the foundational skills required to meet the writing demands of grade school. Differences observed in classroom instructional practices may be at least one important factor affecting students' writing performance (Troia et al., 2009). One avenue that will be important to pursue in the future is to test associations between teacher practices and student outcomes. Given that there were several classes in which little writing instruction took place, it was not possible to test for significant associations. This problem could be circumvented by using a larger sample in the future. Clearly, further systematic research is needed on the variation and impact of writing instruction on students' writing achievement and growth.

Limitations

Although we observed teachers writing instructional practices in a large number of kindergarten classrooms and collected writing measures from the students, this study is not without limitations. For one, this study involved only one school district and may not fully reflect the state of writing instruction *per se*. The number of classrooms was relatively small and we did not have the power to directly examine the relation of teacher instruction to child outcomes. The small sample size also did not permit the use of more sophisticated statistical techniques to partition the variance contributed by students nested within classrooms and schools. Future research with larger samples is clearly needed. However, our results are generally consistent with results of other studies conducted in the 1980s and more recent data on classroom writing instruction obtained through teacher surveys with older students.

Second, our observation of writing instruction was confined to two formal observations during the language arts block. Although the number of observations used in this study was based on previous research studies that have used video recordings for sampling classroom instruction (e.g., Connor et al., 2009; Hiebert et al., 2005; La Paro et al., 2009; La Paro, Pianta, & Stuhlman, 2004; Parr & Limbrick, 2010), it is possible that we might have missed out on some writing instruction taking place during the school day. However, as mentioned earlier conversations with teachers did not indicate this was the case. Relatedly, some of the variation in student performance could be associated with home writing practices. Future research should explore whether home writing mediates school writing instruction.

Conclusions

The National Commission on Writing (2006) and most recently the U.S. Department of Education (see Graham et al., 2002) has made several recommendations on how to improve writing for grade school children. One implication from the present study that relates to their recommendations is to increase the amount of

time students spend writing. The data from this study obtained from direct classroom observation add to results obtained from teacher surveys clearly indicating the need to increase the amount of time students spend on writing to meet grade level benchmarks. Schools need to align teaching with learning goals and recommended writing practice daily.

A second implication of our findings relates to curriculum. Schools need to improve their systems of teaching by incorporating writing into curriculum. Further, it would behoove curriculum developers to embed writing instruction within language arts curricula including handwriting, spelling, and sentence construction. On a final note, we need to improve teacher training programs and incorporate a rigorous agenda to train teachers about evidence-based writing instructional practices either through professional development or in-service opportunities.

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