

Teaching Writing to High School Students: A National Survey

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A random sample of language arts, social studies, and science high school teachers ($N = 361$; 53% women) from the United States were surveyed about what their students wrote, their use of evidence-based writing practices, the adaptations they made for weaker writers, how they assessed writing, their preparation to teach writing, beliefs about the importance of writing, and judgments about their students' writing capabilities. The findings from this survey raised some concerns about the quality of high school writing instruction. The writing activities they were assigned most frequently by teachers involved little analysis and interpretation, and almost one half of the participating teachers did not assign at least one multiparagraph writing assignment monthly. Although the majority of high school teachers did apply most of the evidence-based practices and adaptations included in the survey, they used these practices infrequently. Most teachers did not believe their college teacher education program adequately prepared them to teach writing. A sizable minority of language arts and social studies teachers indicated that their in-service preparation was inadequate too. For science teachers this was close to 60%.

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This study examines how high school teachers in the United States teach writing. This is critical for four reasons. First, writing is an important tool for educational, occupational, and social success in the United States. In school, students' grades are determined, in part, by their performance on written tests and projects (Graham, 2006). Writing also provides a useful tool for supporting and extending students' learning of content material (see meta-analyses by Bangert-Drowns, Hurley, & Wilkinson, 2004; Graham & Perin, 2007a). At work, writing has become an essential skill for employment and promotion, especially for salaried positions (see National Commission on Writing, 2004, 2005). Employees in business and government are now expected to create clearly written documents, memoranda, technical reports, and electronic messages. Finally, participation in civic life and the community at large is influenced by the ability to write. E-mail and text messaging, for instance, have become a common form of social communication.

Second, despite its importance, many youngsters in the United States do not develop the writing skills needed to be successful. In the 2007 National Assessment of Educational Progress (NAEP; Salahu-Din, Persky, & Miller, 2008), 56% of Grades 8 and 12

students scored at the basic level. Although basic writers produce a well-organized paper (involving some analytical, critical, and evaluative thinking), they demonstrate only partial mastery of the writing skills needed for proficient work at that grade level. An additional 12% of Grades 8 and 12 students were below the basic level. In addition, many students exit high school without the writing skills needed for success in college or work. College instructors report that 50% of high school graduates are not prepared for college writing (Achieve, Inc., 2005), and businesses in the United States spend \$3.1 billion annually to improve workers' writing (National Commission on Writing, 2004).

Third, efforts to improve writing are virtually nonexistent in the school reform efforts in the United States. For example, writing is all but absent in the No Child Left Behind legislation (Public Law 107-110) enacted in 2001. Several groups, including the National Commission on Writing (2003), have argued that writing needs to be placed "squarely in the center of the school agenda" (p. 3).

Fourth, how well students write is influenced by how they are taught to write (see Graham & Perin, 2007a). Unfortunately, we know very little about contemporary writing classroom practices in high schools in the United States (there are many more studies examining writing practices with younger students; e.g., Bridge, Compton-Hall, & Cantrell, 1997; Cutler & Graham, in press; Graham, Harris, Fink-Chorzempa, & MacArthur, 2003). The work of Applebee and Langer (2006) provides the most recent attempt to describe writing practices in U.S. schools. They drew on data from past NAEP assessments to examine the writing experiences and instruction of Grades 4, 8, and 12 students. As they noted, however, NAEP was not designed for this purpose. They had to cull data on writing practices from background questions asked of teachers, students, and administrators. These questions were never a main part of NAEP and changed from one assessment to the next.

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This was especially true for high school (Grade 12), where the last time teachers were asked about their writing practices was 1998. As a result, Applebee and Langer's (2006) examination of high school writing practices drew mostly on information obtained from students (as recent as 2005 in some cases). Several of the findings in their report are pertinent to this study and current writing reform efforts.

Most of the reported student information involved how often students engaged in specific types of writing (Applebee & Langer, 2006). On a monthly basis, about 67% indicated they wrote something that involved analysis and interpretation, 60% summarized reading, 55% completed a report, 40% a log or journal entry, 40% wrote a persuasion, and 33% a story. A sizable minority of students, however, indicated they never or hardly ever wrote a paper three pages or longer in their language arts class. Likewise, most students did not write a paragraph or more in social studies (60%) and science (80%) once a week. In contrast, many students (71%) noted they used word processing to improve their writing. Almost three fourths of the students attended schools where moderate to extensive preservice professional development experiences were provided to teachers in writing/reading processes and writing across the curriculum.

Because of the paucity of available data, a broader and more current update of high school writing instruction is needed. Such information is especially important for efforts to reform writing instruction at the high school level. The lack of information makes it difficult to determine what needs to be done. It also increases the probability of implementing proposed solutions that do not fit the problem.

In this study, we examined high school teachers' reported writing practices. This included the type of writing they assigned students, their use of evidence-based writing practices (drawn from three recent reviews; Graham & Perin, 2007a, 2007b, 2007c), the types of adaptations they made for weaker writers, and their use of writing assessment in the classroom. Each of these is a potentially important element for reforming high school writing instruction. First, considerable concern has been raised about what and how much students write (National Commission on Writing, 2003), and Applebee and Langer's (2006) analysis of NAEP data showed that there is a relationship between how well students write and the types of writing they are assigned. Second, what and how high school students are taught also matters. Although evidence-based or research-supported practices are emphasized in reform efforts today (e.g., No Child Left Behind Act), there is virtually no current evidence on high school teachers' use of such practices in the teaching of writing. Third, an important ingredient in developing effective writing programs involves differentiated instruction for students who need extra assistance. As Corno and Snow (1986) indicated in their seminal review, improved educational outcomes depend on adjusting instruction to individual differences among students. Fourth, assessment is one of the primary pillars of educational reform, as it provides needed information on students' progress as well as their strengths and weaknesses (National Commission on Writing, 2003). Although state and district writing assessment have received considerable attention, little is known about high school teachers' writing assessment practices.

We also asked teachers about the preparation they received to teach writing. The effectiveness of educational reform efforts rests greatly on the skills of teachers, and the National Commission on

Writing (2003) contends that high school teachers are poorly prepared to teach writing. Finally, teachers were asked questions about the importance of writing beyond high school and their students' writing attainment (current and projected). Teachers' views of writing and their students' capabilities provide potentially important information. For example, if teachers view writing as unimportant in the long run, they may be less inclined to teach it.

Instead of concentrating on how writing was taught in a single school, district, or state, we cast a broader net, focusing on the teaching of writing across the United States. Consequently, we randomly sampled teachers from across the nation and asked them to complete a survey about writing and writing instruction in their classes. This approach to the study of teaching practices is based on the assumption that teachers are aware of the elements of their teaching and can relate this knowledge to questions about what they do in the classroom, just as other professionals can describe what they do when queried about their actions (Diaper, 1989). There is evidence that teachers can do this, as findings from previous studies that used survey methodology to examine teachers' literacy practices were corroborated by findings from observational research (e.g., Bridge & Hiebert, 1985; DeFord, 1985; Pressley, Wharton-McDonald, Rankin, Mistretta, & Yokoi, 1996).

A second assumption that guided this study was that writing and writing practices in high school differs across subjects or disciplines (Applebee, 1981). Many contemporary scholars in composition studies emphasize that writing is socially situated and context specific (see Bazerman, 1988; Berkenkotter & Huckin, 1995; Russell, 1997). As a result, our survey focused on three different groups of high school teachers: language arts, social studies, and science. Our decision to examine writing practices in these three different disciplines is based on the assumption that the teaching and application of writing at the high school level does not reside in a single teacher or single discipline. This assertion is based on three tenets. One, there is a sizable body of literature that demonstrates that writing can facilitate content learning in a variety of different content areas (Bangert-Drowns et al., 2004; Graham & Perin, 2007a, 2007b). Thus, it is advantageous for language arts, social studies, science, and other content teachers to use writing to facilitate learning in their classrooms. Two, as many scholars have noted (Bazerman, 1988; Russell, 1997), writing is an activity that involves different purposes, forms, or processes, across varying academic disciplines. For example, the types of evidence, how it is presented, and the structure of the argument differ considerably when the discourse community involves science versus the study of literature. Three, writing is an extremely complex skill, and learning to write skillfully in multiple academic areas requires a concerted effort across disciplines and throughout the high school years (Graham, 2006).

The specific questions we addressed in this study were as follows (we examined each question to determine whether there were discipline specific differences):

1. What types of writing do high school teachers assign?
2. Do high school teachers apply evidence-based writing practices?
3. What adaptations do high school teachers make for struggling writers?

4. What writing assessment practices do high school teachers apply?
5. Are high school teachers prepared to teach writing?
6. Do high school teachers believe that writing is important beyond high school?
7. Do high school teachers believe students possess and will acquire needed writing skills?

Despite our assertion that language arts, science, and social studies teachers should use writing to promote content learning and teach writing within their disciplines, we anticipated that there would be statistically significant differences between teachers from the three disciplines for the first five questions. For example, we anticipated that language arts teachers would indicate that they were better prepared to teach writing than science and social studies teachers would, as writing is considered a central element in the preparation of English teachers, whereas subject-matter content is central to the other two disciplines. Likewise, we expected differences in writing assignments, instructional procedures, and assessment by discipline. As Applebee (1981) indicated, "Major subject areas represent differing universes of discourse, each with characteristic registers and differentiated writing skill" (p. 4). He found, for example, that teachers from different disciplines used writing for different purposes. Language arts teachers were more likely to stress using writing as a means for students to explore personal and imaginative experience, whereas science teachers placed more emphasis on using writing to foster content learning. We reasoned that such differences should also be evident in our study.

Lastly, it is important to note that our investigation provides information relevant to three recommendations from the National Commission on Writing (2003). They proposed that we increase the amount of writing students do within and outside of school, use technology to advance the learning and teaching of writing, and better prepare teachers to teach writing. Although the questions that we asked do not provide a perfect match for these three recommendations (e.g., we only asked teachers about their use of word processing and not other technological tools), they do provide pertinent information.

Method

Participants

A stratified random sampling procedure was used to select a sample of 1,200 language arts, social studies, and science teachers in Grades 9 to 12 in the United States. The sampling procedure was stratified so that the number of teachers selected in each of the four geographic regions (Northeast, Southeast, Northwest, and Southwest) identified in the 2000 U.S. Census Report was representative of the number of high school students age 14 to 18 years living in each region. The names of the 1,200 teachers were obtained from Market Data Retrieval, a database containing over 290,633 language arts, social studies, and science teachers in 14,700 high schools across the country. Before mailing the survey to teachers, their school was contacted to verify that the teacher was still employed at the school. We found that 489 teachers were no longer

working at the school due to transfer, promotion to another position, retirement, maternity leave, or death. These teachers were removed from the sample. We decided not to replace these 489 teachers because we expected at least a 50% return rate (we have typically obtained return rates of 60% or higher; e.g., Cutler & Graham, in press), and this would provide us with a $\pm 5\%$ sampling error for our most restrictive questions (ones that required a check or no check response), and $\pm 3.5\%$ sampling errors with items on the survey that had the most choices (items that provided eight possible choices) based on the population of high school teachers in the United States (calculated using a formula from Dillman, 2000).

The survey and consent letter were mailed to the remaining 711 teachers. Of the 711 contacted, 361 teachers completed it, providing us with a 51% return rate. According to Weisberg, Krosnick, and Bowen (1989), a survey return rate of 50% is generally considered acceptable.

Table 1 summarizes the demographic characteristics of the responders ($N = 361$) and nonresponders ($N = 350$) on three demographic variables. Chi-square analysis revealed no statistically significant differences between responders and nonresponders on the following two variables: gender ($p = .22$) and geographic region ($p = .06$). There was, however, a statistically significant difference between responders and nonresponders in terms of teacher discipline ($p = .001$). Follow-up analyses

Table 1
Characteristics of Responders and Nonresponders

Variable	Responders		Nonresponders	
	<i>N</i>	%	<i>N</i>	%
Gender of teacher				
Male	171	47	182	52
Female	190	53	168	48
Content area				
Language arts	146	40	102	29
Science	121	34	113	32
Social studies	94	26	134	38
Region				
Northeast	71	20	66	19
Midwest	74	20	97	28
South	123	34	121	35
West	93	26	65	19
Highest degree earned				
Bachelor	110	31	—	—
Master	235	65	—	—
Doctorate	15	4	—	—
Years teaching				
<i>M</i>	16	—	—	—
<i>SD</i>	10	—	—	—
Range	(1–45)	—	—	—
Location				
Urban	80	22	—	—
Suburban	183	51	—	—
Rural	90	25	—	—
Size of school				
<i>M</i>	1,480	—	—	—
<i>SD</i>	866	—	—	—
% of students in classrooms				
Special education	306	13	—	—
English language learners	311	12	—	—

Note. Dashes indicate no data were available.

showed that language arts teachers were more likely to complete the survey ($p = .02$) and social studies teachers were less likely to do so ($p = .008$).

The teachers who did complete the survey averaged 16 years of teaching, and the majority of them had completed a master's degree (see Table 1). Approximately one out of every two teachers taught in a suburban area. The teachers were overwhelmingly White (87%), with a small minority of teachers indicating that they were Black (3%), Hispanic (3%), or other (including American Indian, Asian, biracial, or other racial designation). The typical teacher taught in a school that included about 1,500 students, with 12% of their students classified as English-language learners and 13% receiving special education services (see Table 1). However, there was considerable variability in these statistics. With the exception of gender ($p < .001$), there were no statistically significant differences between language arts, science, and social studies teachers in terms of years spent teaching, education, geographic region, ethnicity, size of school, percent of students classified as English language learners, and percent of students receiving special education services (all $ps > .19$). Seventy percent, 49%, and 31% of language arts, social studies, and science teachers, respectively, were women.

Instrumentation

A 76-item survey was created to obtain information about the writing practices and beliefs of high school teachers (the survey is in the Appendix). The survey used a variety of question formats, including Likert-type items, checklists, and open-ended questions. The survey was piloted with six language arts, science, and social studies teachers. The feedback from these teachers was used to further fine-tune the questionnaire before it was mailed to the participating teachers. The total time needed to complete the survey materials was 15 to 20 min.

The first section of the survey (see Appendix) collected background information about the teacher, their school, their students, use of a commercial program, and their preparation to teach writing in general. The second section asked teachers to indicate how often their students completed 22 different writing activities (ranging from copying text to writing a research paper), providing space for them to add additional activities that were not listed. Frequency of use was indicated with an 8-point Likert-type scale ranging from *never* to *daily*.

The third section asked teachers to indicate how often they used 17 writing practices (ranging from using word processing to teaching strategies for planning text; see Appendix). These practices were drawn from recent meta-analyses of experimental/quasi-experimental writing intervention research (Graham & Perin, 2007a, 2007b) and single subject writing intervention research (Graham & Perin, 2007c). We do not contend that these are the only writing practices that are effective (see Pressley, Graham, & Harris, 2006). Rather, they provide a list of potentially effective practices, as they have been tested in four or more studies and found to be effective. It is important to note that we did not identify these practices as evidence-based (to reduce the chance that teachers would respond in a socially desirable manner). As in the previous section, teachers were encouraged to add additional writing practices they used that were not listed. Frequency of use was

indicated with an 8-point Likert-type scale ranging from *never* to *several times a day*.

There are two comments that need to be made about these 17 practices. First, one of them, teaching grammar, is not an evidence-based practice, as it yielded a negative average weighted effect size in the meta-analysis by Graham and Perin (2007a, 2007b). Nevertheless, we thought it was important to include this writing practice to see whether teachers were applying it. Second, the Graham and Perin meta-analyses were not limited to high school students but included youngsters from Grades 4 to 12. Several of the practices included in this section (i.e., establishing specific goals for writing, prewriting activities, and self-monitoring of writing performance) were not tested with high school students. They were found to be effective with middle school students (Grades 6 to 8), however, and we decided to include them in the survey.

The fourth section of the survey asked teachers to indicate how often they made 16 instructional adaptations for struggling writers in their classes (ranging from providing peer support to providing extra sentence construction instruction; see Appendix). These adaptations were mostly taken from a study by Graham et al. (2003) that examined the most common types of adaptations elementary grade teachers made for weaker writers in their classes. Frequency of use was indicated with a 5-point Likert-type scale ranging from *never* to *daily*.

The fifth section asked teachers questions about their assessment practices. They were asked to check which procedures they used (see Appendix). Five items focused on using writing to evaluate content learning and two items on methods for evaluating students' writing. For both areas, they were provided space to identify other assessment procedures they applied.

The final section of the survey contained items that asked teachers to state their agreement (from *strongly agree*) or disagreement (to *strongly disagree*) with six statements. Two of the statements focused on teachers' preparation to teach writing in their content area. One statement concerned the importance of writing beyond high school. The other three statements concentrated on teachers' judgments about whether their students currently have and will continue to acquire needed writing skills (see Appendix).

Procedures

This survey study employed an initial mailing and two follow-up mailings in accordance with the tailored design method (Dillman, 2000). The initial mailing packet was sent to 711 teachers during the 2nd week of January. The mailing packet consisted of an introductory letter briefly describing the purpose of the survey, a copy of the survey, a self-addressed, stamped return envelope, and a bag of tea for them to prepare and drink as they completed the survey. One week after the initial mailing, a reminder postcard was sent to 711 teachers. Thirty-seven percent of the teachers ($n = 264$) completed and returned the survey from the first mailing. The final follow-up mailing was sent 4 weeks after the reminder postcard to the teachers who did not complete and return the questionnaire from the initial mailing. The packet consisted of another introductory letter, a copy of the survey, a self-addressed, stamped return envelope, and a bag of tea. The final follow-up mailing accounted for another 97 surveys (14%).

Results

Approach to Data Analysis

Before conducting any statistical analyses, we first entered teachers' responses to all Likert-type and checklist items on the questionnaire into an SPSS database. Two assistants separately entered the data for all questionnaires. Reliability for data entry was conducted for all surveys using a computerized comparison program. Coding agreement between the two assistants was 99%. Each disagreement was checked with the original survey and corrected in the SPSS database. For all Likert-type items ($N = 63$), we report the mean and standard deviation by discipline (language arts, social studies, and science) and across all teachers. We also report the percent of teachers who checked each point on the scale for each Likert-type item. This allowed us to display how frequently specific practices occurred (e.g., 15% of teachers engaged in the practice monthly, 22% once a week, and so forth). For all questions that just involved a check (no Likert-type scale was used), we calculated the percent of teachers who engaged in each practice, providing percentages for all teachers and by discipline (language arts, social studies, and science).

There were five open-ended questions. For each question, teachers' responses were placed into categories and then tabulated. For example, one question asked whether teachers used additional practices to teach writing. We sorted all of the teachers' responses into categories (e.g., test preparation, vocabulary instruction, and other). If a teacher added a writing practice already identified in the listed items, it was not included in this analysis. This allowed us to identify additional practices beyond the ones in the survey. Reliability for coding for the five open-ended questions was conducted on 30% of the responses with a coding agreement of 100%.

To determine whether there were statistically significant differences by teacher discipline, we ran 81 separate analyses (this included analyses reported in the Method section). For all Likert-type items, we conducted a one-way analysis of variance, with teacher discipline as the independent variable. For all items that involved just a yes (checked) or no (unchecked) response, we conducted a chi-square test to determine whether teachers' responses were related to discipline.

In order to control for Type I errors, we set the critical alpha value using Bonferroni correction ($\alpha = .05/81$) and rejected the null hypothesis if the p value was less than .0006. It is important to note that the responses for most of the Likert-type items (90%) did not meet the assumptions of homogeneity of variance due to skewness or kurtosis, with levels of one or more of these indices exceeding the range of ± 1.96 Fisher coefficient. For any variable where this was the case, we also ran the analysis using a nonparametric procedure—the Kruskal-Wallis one-way analysis of variance by ranks. In all cases, the results of parametric and nonparametric procedures were identical. Thus, we only report the parametric results in this article. When there was a statistically significant difference by discipline for analysis of variance (for the Likert-type items), LSD post hoc comparisons were used to determine which teacher groups significantly differed from the others. When a statistically significant chi-square was obtained (for a checklist item), it was followed by a series of chi-square tests comparing one teacher discipline to another. Effect sizes are reported only when a statistically

significant difference was found between teacher groups. Results of post hoc analyses and effect sizes are presented in the relevant tables (2–7).

What Type of Writing Do High School Teachers Assign?

Table 2 presents how often teachers reported using 22 different writing activities in their classes. The items are arranged from those that occurred most to least frequently (based on the mean for all teachers).

By far the most common writing activities used by teachers were short answer response to homework, response to material read, completing worksheets, and summary of materials read. A majority of teachers used these four activities once a week or more often (see Table 2). The next most common writing activities were journal entries and lists, with the majority of teachers using these two activities once a month or more often. This was followed by writing step-by-step instructions and five-paragraph essays, with the majority of teachers using these activities once a quarter or more often. Teachers assigned persuasive essays once a semester or more often. For all of the remaining activities, a majority of teachers applied them once a year or less.

For 14 of the 22 writing activities, there was a statistically significant difference by discipline (all $ps < .0001$; see Table 2). Language arts teachers were more likely than both science and social studies teachers to have their students write journal entries, personal narratives, short stories, poems, book reports, autobiographies, business letters, and stage/screen plays. They were also more likely than science teachers to have students respond to material read, write a five-paragraph essay, write a persuasive essay, and write a biography. Finally, they were less likely than social studies teachers to use worksheets. Many of these differences centered on imaginative (e.g., stories) and personal uses of writing (e.g., personal narrative), although some of the differences involved responding to material read (e.g., book report) and informational uses of writing (e.g., biography). Fifty-two language arts teachers (36%) reported using other writing activities, including literary analysis, at least once a year (19 responders), other types of essay writing (cause and effect, descriptive, and reflection) at least once a semester (10 responders), and timed essay writing for advanced-placement classes once a week (7 responders).

Social studies teachers were more likely than science teachers to have their students complete the following writing activities: respond to material read, five-paragraph essay, persuasive essay, personal narrative, short story, book report, biography, and autobiography. These differences mainly focused on using writing for informational purposes (e.g., five-paragraph essay) and responding to material read (e.g., book report) but also included imaginative (e.g., stories) and personal uses of writing (e.g., autobiography). Thirty-five social studies teachers (37%) reported using other writing activities, including answering document-based questions, at least once per month (20 responders).

Science teachers assigned worksheets and writing step-by-step instruction more often than language arts and social studies teachers did. These activities were most likely used to promote student learning or understanding of scientific material. Fifty-eight (48%) science teachers reported using other writing activities. This mainly involved lab reports (40 responders).

Table 2
How Often Secondary Teachers Reported Using Specific Writing Activities

Writing activity	Never	Once/ year	Once/ semester	Once/ quarter	Once/ month	Once/ week	Several times/week	Daily	<i>M</i>	<i>SD</i>	Effect size (<i>d</i>)*
Short answer response (<i>N</i> = 359)											
Language Arts	4%	0%	0%	0%	14%	36%	42%	4%	5.16	1.32	
Science	3%	0%	1%	3%	13%	38%	36%	7%	5.14	1.25	
Social Studies	2%	0%	2%	2%	10%	46%	31%	7%	5.13	1.22	
Total	3%	0%	1%	2%	13%	39%	37%	6%	5.14	1.27	
Response to material read (<i>N</i> = 357)											
Language Arts	1%	0%	0%	3%	19%	32%	38%	8%	5.24	1.06	LA > SC: 0.74
Science	14%	2%	4%	7%	19%	33%	15%	6%	4.04	2.03	
Social Studies	1%	0%	0%	2%	18%	45%	26%	8%	5.14	1.05	SS > SC: 0.68
Total	5%	1%	1%	4%	19%	36%	27%	7%	4.81	1.56	
Completing worksheets (<i>N</i> = 354)*											
Language Arts	10%	2%	1%	5%	19%	39%	21%	2%	4.31	1.81	SC > LA: 0.64
Science	3%	0%	0%	3%	10%	35%	40%	9%	5.30	1.25	SS > LA: 0.30
Social Studies	3%	1%	0%	6%	16%	45%	25%	2%	4.79	1.32	SC > SS: 0.40
Total	6%	1%	1%	5%	16%	39%	28%	5%	4.77	1.57	
Summary of material read (<i>N</i> = 357)											
Language Arts	7%	2%	2%	12%	29%	25%	20%	4%	4.26	1.69	
Science	17%	1%	5%	11%	24%	22%	16%	4%	3.74	2.08	
Social Studies	4%	1%	2%	2%	24%	39%	20%	8%	4.75	1.49	
Total	10%	1%	3%	9%	26%	28%	19%	5%	4.21	1.83	
Journal entry (<i>N</i> = 355)*											
Language Arts	10%	2%	3%	7%	8%	28%	26%	15%	4.63	2.08	LA > SC: 1.09
Science	60%	1%	2%	3%	10%	9%	6%	10%	2.02	2.68	LA > SS: 0.93
Social Studies	47%	7%	2%	3%	12%	13%	7%	10%	2.41	2.65	
Total	36%	3%	3%	5%	10%	18%	14%	12%	3.19	2.72	
Lists (<i>N</i> = 349)											
Language Arts	38%	1%	4%	7%	18%	18%	12%	1%	2.74	2.36	
Science	32%	0%	2%	8%	21%	21%	13%	3%	3.20	2.38	
Social Studies	26%	2%	3%	6%	14%	32%	13%	3%	3.44	2.34	
Total	33%	1%	3%	7%	18%	23%	13%	2%	3.08	2.37	
Step-by-step instructions (<i>N</i> = 344)*											
Language Arts	30%	15%	10%	14%	14%	10%	6%	2%	2.31	2.08	SC > LA: 0.62
Science	14%	4%	8%	16%	24%	20%	9%	6%	3.58	1.99	
Social Studies	41%	5%	10%	5%	12%	13%	9%	6%	2.44	2.48	SC > SS: 0.51
Total	27%	9%	9%	12%	17%	14%	8%	4%	2.78	2.23	
5-paragraph essay (<i>N</i> = 357)*											
Language Arts	7%	1%	9%	30%	34%	16%	2%	1%	3.42	1.37	LA > SC: 1.43
Science	64%	3%	8%	10%	7%	6%	2%	0%	1.17	1.76	
Social Studies	8%	4%	17%	16%	37%	14%	1%	3%	3.32	1.58	SS > SC: 1.29
Total	26%	3%	11%	20%	26%	12%	2%	1%	2.64	1.88	
Persuasive essay (<i>N</i> = 358)*											
Language Arts	2%	17%	30%	25%	19%	5%	1%	1%	2.66	1.30	LA > SC: 1.35
Science	67%	7%	12%	6%	5%	2%	1%	0%	0.83	1.40	
Social Studies	20%	5%	14%	22%	30%	10%	0%	0%	2.67	1.64	SS > SC: 1.21
Total	28%	11%	20%	17%	17%	5%	1%	1%	2.05	1.66	
Copying text (<i>N</i> = 341)											
Language Arts	59%	4%	6%	4%	10%	9%	7%	1%	1.62	2.11	
Science	53%	3%	5%	2%	7%	14%	14%	3%	2.16	2.57	
Social Studies	53%	2%	0%	6%	8%	17%	8%	6%	2.26	2.61	
Total	55%	3%	4%	4%	9%	13%	10%	3%	1.97	2.45	
Powerpoint presentation (<i>N</i> = 357)											
Language Arts	36%	25%	22%	10%	6%	1%	0%	0%	1.29	1.29	
Science	32%	29%	17%	12%	2%	5%	1%	2%	1.55	1.67	
Social Studies	21%	20%	27%	15%	10%	4%	1%	2%	2.02	1.60	
Total	31%	25%	22%	12%	6%	3%	1%	1%	1.57	1.54	
Personal narrative (<i>N</i> = 355)*											
Language Arts	5%	26%	32%	19%	13%	5%	1%	0%	2.27	1.29	LA > SC: 1.14
Science	76%	5%	8%	3%	3%	3%	1%	1%	0.71	1.45	LA > SS: 0.61
Social Studies	51%	12%	11%	8%	15%	2%	1%	0%	1.35	1.68	SS > SC: 0.41
Total	41%	15%	19%	11%	10%	3%	1%	0%	1.50	1.60	

(table continues)

Table 2 (continued)

Writing activity	Never	Once/ year	Once/ semester	Once/ quarter	Once/ month	Once/ week	Several times/week	Daily	<i>M</i>	<i>SD</i>	Effect size (<i>d</i>)*
Research paper (<i>N</i> = 359)											
Language Arts	8%	55%	29%	8%	1%	0%	0%	0%	1.38	0.77	
Science	31%	22%	27%	16%	4%	0%	0%	0%	1.40	1.20	
Social Studies	13%	30%	41%	13%	3%	0%	0%	0%	1.63	0.98	
Total	17%	37%	32%	12%	3%	0%	0%	0%	1.45	0.99	
Email correspondence (<i>N</i> = 350)											
Language Arts	66%	4%	5%	4%	6%	4%	6%	5%	1.39	2.28	
Science	71%	4%	2%	3%	8%	4%	4%	3%	1.19	2.12	
Social Studies	60%	2%	2%	10%	7%	3%	11%	6%	1.86	2.50	
Total	66%	4%	3%	5%	7%	4%	7%	5%	1.44	2.30	
Short story (<i>N</i> = 357)*											
Language Arts	25%	25%	21%	10%	8%	7%	4%	0%	1.90	1.72	LA > SC: 1.06
Science	79%	8%	8%	4%	1%	1%	0%	0%	0.43	0.96	LA > SS: 0.61
Social Studies	70%	4%	8%	9%	7%	1%	2%	0%	0.90	1.56	SS > SC: 0.36
Total	55%	14%	13%	8%	5%	3%	2%	0%	1.15	1.60	
Poem (<i>N</i> = 357)*											
Language Arts	13%	25%	27%	18%	9%	7%	1%	0%	2.11	1.45	
Science	87%	6%	3%	2%	2%	0%	1%	0%	0.28	0.90	
Social Studies	76%	7%	10%	3%	4%	0%	0%	0%	0.53	1.08	
Total	54%	14%	14%	9%	5%	3%	1%	0%	1.09	1.47	
Book report (<i>N</i> = 354)*											
Language Arts	34%	15%	15%	24%	11%	1%	0%	0%	1.65	1.47	LA > SC: 1.04
Science	76%	11%	9%	3%	1%	0%	0%	0%	0.41	0.83	LA > SS: 0.62
Social Studies	57%	14%	17%	12%	0%	0%	0%	0%	0.85	1.10	SS > SC: 0.45
Total	54%	14%	14%	14%	5%	0%	0%	0%	1.03	1.31	
Memo (<i>N</i> = 347)											
Language Arts	71%	8%	4%	2%	4%	5%	4%	2%	1.01	1.92	
Science	85%	1%	0%	1%	2%	4%	3%	4%	0.82	2.03	
Social Studies	82%	5%	5%	0%	0%	7%	1%	1%	0.62	1.58	
Total	78%	5%	3%	1%	2%	5%	3%	3%	0.84	1.88	
Biography (<i>N</i> = 348)*											
Language Arts	44%	33%	17%	5%	1%	0%	0%	0%	0.86	0.93	LA > SC: 0.71
Science	81%	10%	8%	1%	0%	0%	0%	0%	0.29	0.65	
Social Studies	47%	23%	19%	10%	0%	1%	0%	0%	0.97	1.12	SS > SC: 0.74
Total	58%	22%	15%	5%	0%	0%	0%	0%	0.69	0.95	
Autobiography (<i>N</i> = 352)*											
Language Arts	23%	50%	17%	8%	1%	1%	0%	0%	1.17	0.99	LA > SC: 1.32
Science	90%	7%	3%	1%	0%	0%	0%	0%	0.14	0.47	LA > SS: 0.88
Social Studies	70%	20%	9%	1%	0%	0%	0%	0%	0.41	0.70	SS > SC: 0.45
Total	58%	28%	10%	4%	0%	1%	0%	0%	0.62	0.90	
Business letter (<i>N</i> = 354)*											
Language Arts	39%	34%	18%	8%	1%	1%	0%	0%	1.00	1.03	LA > SC: 0.87
Science	86%	9%	3%	2%	1%	0%	0%	0%	0.24	0.68	LA > SS: 0.63
Social Studies	80%	10%	7%	1%	3%	0%	0%	0%	0.39	0.91	
Total	65%	19%	10%	4%	1%	0%	0%	0%	0.58	0.96	
Stage/screen play (<i>N</i> = 356)*											
Language Arts	58%	18%	14%	8%	3%	0%	0%	0%	0.80	1.11	LA > SC: 0.71
Science	88%	7%	4%	1%	0%	0%	0%	0%	0.18	0.53	LA > SS: 0.52
Social Studies	70%	20%	9%	1%	0%	0%	0%	0%	0.30	0.78	
Total	75%	11%	9%	4%	1%	0%	0%	0%	0.46	0.91	

Note. Total percentages may not equal 100 due to rounding. Effect size reported for statistical significance of post hoc comparisons. Scoring is as follows: 0 = never; 1 = once/year; 2 = once/semester; 3 = once/quarter; 4 = once/month; 5 = once/week; 6 = several times/week; 7 = daily. LA = language arts teachers; SC = science teachers; SS = social studies teachers.

* $p < .0006$ when teacher discipline was compared.

To gain some sense of whether teachers asked their students to complete multiparagraph writing assignments, we identified the writing activities in Table 2 that were most likely to involve such writing. This included eight assignments: five-paragraph essay, persuasive essay, research paper, short story, book report, biography, autobiography, and stage/screen play. For language arts teachers, all of them asked their students to complete at least one of these once a year. In addition, only 1% and 7% of them did not

ask their students to complete at least one of these multiparagraph assignments during a semester or quarterly, respectively. However, 33% of language arts teachers did not assign one of these eight activities at least monthly, whereas 71% of these teachers did not assign at least one of them weekly.

The pattern for social studies teachers was similar, as a relatively small percentage of these educators did not assign at least one of these eight multiparagraph writing activities at least once a

year (1%), once a semester (3%), or once a quarter (16%). Like language arts teachers, however, close to one third of the social studies teachers (29%) did not ask their students to complete at least one of these assignments monthly, and 77% did not assign any of them at least once a week.

Science teachers were less likely to ask their students to complete at least one of these eight multiparagraph assignments. Eighteen percent of these educators did not assign any of the eight activities during the school year. Thirty-six percent of these teachers did not ask students to complete any of these assignments during a semester, whereas 58% did not do this once a quarter, 77% did not do this monthly, and 92% did not do this weekly.

Collectively, almost one half of the teachers across the three disciplines (47%) did not assign at least one of these multiparagraph activities at least monthly. On a weekly basis, 80% of teachers did not assign at least one of these eight activities. When such activities were assigned, teachers were most likely to ask students to write a five-paragraph paper or a persuasive essay.

Do High School Teachers Apply Evidence-Based Writing Practices?

Table 3 provides information on how often teachers reported using 17 specific writing instruction strategies or methods to teach writing. The items are arranged from most to least frequently applied (based on the mean for all teachers). The final item listed on the table reports the mean number of writing strategies that responders reported using at least some time during the year (this does not include grammar instruction, as it is not an evidence-based practice).

Of the 17 writing practices, teachers reported using 50% or more of all of these methods at least several times a year. There was, however, a statistically significant difference by discipline for total number of evidence-based practices applied. Language arts teachers reported using more evidence-based practices than social studies and science teachers did, whereas social studies teachers reported using more than science teachers did.

The three most commonly used evidence-based practices were verbal praise/positive reinforcement, direct instruction (modeling, guided practice, and review), and establishing specific goals for writing assignments (see Table 3). These were applied by more than one half of the teachers at least several times a month. At least one half of the teachers used the following four practices at least monthly: writing as a tool for subject matter learning, prewriting activities to gather and/or organize possible writing ideas, use of word processing to complete writing assignments, and teaching strategies for planning. Less frequently used were the following eight writing practices, which were applied by more than one half of the teachers several times a year: grammar instruction, inquiry activities, teaching strategies for summarization, the process approach to writing, student self-monitoring of writing performance, student collaboration around writing processes, teaching strategies for editing, teaching strategies for revising, and providing good models of writing for students to emulate. The least used practice was sentence combining, which was never used by more than one half of the teachers.

For 14 of the 17 writing practices, there was a statistically significant difference by discipline (all $ps < .0001$; see Table 3). Science teachers did not use any of these 14 practices more often

than the other two discipline teachers did. In contrast, language arts teachers used all but one of the 14 practices (teaching summarization) more often than science and social studies teachers did. Language arts teachers were more likely to provide skill instruction (grammar and sentence combining), teach writing processes (planning, revising, and editing), facilitate writing processes (writing process approach, prewriting activities, student collaboration around process, and word processing), specify expectations (establish goals for writing and models of good writing), and provide mechanisms for obtaining feedback (praise/reinforcement and self-monitoring). Language art teachers taught summarization more often than science teachers did.

Although social studies teachers engaged in the following practices less often than language arts teachers did, they applied them more often than science teachers did: skill instruction (sentence combining), teach writing process (planning, revising, and editing), facilitate writing process (prewriting activities), specify expectations (models of good writing), and provide mechanisms for obtaining feedback (praise/reinforcement and self-monitoring). They also taught summarization more often than science teachers did (but did not differ from language arts teachers in applying this practice).

When asked to identify other instructional practices used to teach writing, only 10 teachers responded (3%). Although the response rate was very low, the additional instructional practices represented three major categories: test preparation (5 responders), vocabulary instruction (3 responders), and other writing practices (2 responders). It is interesting to note that the responses under the other category were genre-specific writing activities: poetic form in language arts and hypothesis writing in science.

We further asked teachers whether they used any curriculum materials or curriculum to teach writing. Only 40 teachers (11%) indicated that they did, with 31 (21%), 6 (5%), and 3 (3%) of language arts, science, and social studies teachers, respectively, using such materials. In response to the open-ended question asking them to identify the types of materials they used, the following 11 categories emerged: secondary reading and writing program (10 teachers; e.g., *Prentice Hall Literature Gold*), K-12 writing program (7 teachers; e.g., *6 + 1 Traits and Stack the Deck*), college preparation and advanced-placement material (6 teachers; e.g., *Jane Schaffer Writing Program*), web-based program (6 teachers; e.g., *Laying the Foundation*), state assessment program (3 teachers), learning and writing strategies material (2 teachers; e.g., Cornell note-taking system), secondary writing program (1 teacher; e.g., *Writer's Choice*), writing test preparation material (1 teacher), school to work material (1 teacher), media/periodical (1 teacher), and science material with writing included (1 teacher).

What Adaptations Do High School Teachers Make for Struggling Writers?

Table 4 presents how often teachers reported making 16 specific instructional adaptations for struggling writers in their classrooms. The adaptations are arranged from most to least frequent (based on the mean for all teachers). The final item listed in Table 4 reports the mean number of writing adaptations that teachers reported making for their struggling writers.

Table 3
How Often Secondary Teachers Reported Using Evidence-Based Writing Practices

Writing instruction strategies	Never	Several times/year	Monthly	Several times/month	Weekly	Several times/week	Daily	Several times/day	<i>M</i>	<i>SD</i>	Effect size (<i>d</i>)*
Verbally praising and using positive reinforcement (<i>N</i> = 357)*											
Language Arts	1%	16%	11%	16%	11%	15%	17%	12%	3.98	2.05	LA > SC: 0.70
Science	20%	31%	5%	10%	11%	9%	14%	1%	2.52	2.15	LA > SS: 0.38
Social Studies	4%	23%	10%	18%	22%	7%	12%	5%	3.22	1.94	SS > SC: 0.34
Total	8%	22%	9%	15%	14%	11%	15%	7%	3.29	2.15	
Direct instruction methods (<i>N</i> = 356)											
Language Arts	3%	19%	13%	19%	14%	12%	13%	6%	3.51	1.94	
Science	13%	19%	9%	10%	8%	20%	20%	3%	3.19	2.21	
Social Studies	11%	28%	10%	13%	12%	7%	18%	2%	2.95	2.15	
Total	8%	21%	11%	15%	11%	13%	17%	4%	3.26	2.11	
Establishing specific goals for writing assignments (<i>N</i> = 356)*											
Language Arts	1%	20%	12%	26%	16%	15%	10%	0%	3.18	1.60	LA > SC: 0.59
Science	12%	31%	11%	20%	13%	8%	5%	0%	2.20	1.72	LA > SS: 0.44
Social Studies	2%	30%	18%	20%	20%	8%	1%	1%	2.53	1.38	
Total	5%	26%	14%	23%	16%	10%	6%	1%	2.75	1.65	
Student use of writing as a tool for subject-matter learning (<i>N</i> = 349)											
Language Arts	14%	26%	11%	19%	11%	9%	9%	1%	2.54	1.91	
Science	30%	24%	13%	11%	8%	8%	4%	0%	1.76	1.84	
Social Studies	13%	27%	17%	19%	16%	6%	3%	0%	2.16	1.61	
Total	19%	26%	13%	16%	11%	8%	6%	0%	2.24	1.83	
Grammar instruction (<i>N</i> = 357)*											
Language Arts	7%	21%	16%	15%	15%	11%	13%	2%	3.09	1.96	LA > SC: 1.09
Science	56%	18%	3%	8%	5%	3%	8%	1%	1.05	1.77	LA > SS: 0.75
Social Studies	41%	24%	7%	11%	3%	2%	11%	1%	1.59	2.04	
Total	32%	21%	9%	12%	8%	6%	11%	1%	2.10	2.13	
Student engagement in prewriting activities (<i>N</i> = 358)*											
Language Arts	2%	25%	18%	24%	15%	10%	7%	0%	2.84	1.59	LA > SC: 1.27
Science	51%	23%	10%	12%	2%	2%	1%	0%	0.99	1.32	LA > SS: 0.56
Social Studies	16%	33%	13%	22%	9%	4%	2%	1%	1.97	1.54	SS > SC: 0.68
Total	22%	26%	14%	19%	9%	6%	4%	0%	1.99	1.69	
Student completion of writing assignments using word processing (<i>N</i> = 352)*											
Language Arts	11%	25%	16%	28%	12%	4%	4%	1%	2.35	1.56	LA > SC: 0.56
Science	24%	38%	16%	12%	6%	5%	0%	0%	1.52	1.38	LA > SS: 0.26
Social Studies	17%	30%	19%	17%	10%	7%	0%	0%	1.95	1.48	
Total	17%	31%	17%	20%	9%	5%	2%	0%	1.98	1.54	
Strategies for planning (<i>N</i> = 358)*											
Language Arts	1%	28%	15%	35%	10%	10%	1%	1%	2.72	1.42	LA > SC: 1.41
Science	43%	30%	12%	13%	2%	1%	0%	0%	0.94	1.08	LA > SS: 0.67
Social Studies	11%	45%	14%	20%	5%	2%	1%	1%	1.78	1.39	SS > SC: 0.67
Total	17%	33%	14%	23%	6%	5%	1%	1%	1.89	1.51	
Student engagement in research/inquiry activities (<i>N</i> = 356)											
Language Arts	7%	55%	13%	18%	3%	2%	1%	0%	1.69	1.22	
Science	7%	36%	17%	20%	12%	7%	2%	0%	2.20	1.42	
Social Studies	5%	52%	25%	5%	10%	2%	0%	0%	1.66	1.14	
Total	7%	48%	18%	15%	8%	4%	1%	0%	1.86	1.30	
Strategies for summarizing (<i>N</i> = 359)*											
Language Arts	11%	36%	14%	16%	14%	6%	3%	1%	2.21	1.57	LA > SC: 0.77
Science	38%	33%	13%	8%	4%	3%	0%	0%	1.12	1.26	SS > SC: 0.50
Social Studies	12%	45%	15%	14%	8%	3%	3%	0%	1.80	1.46	
Total	20%	37%	14%	14%	9%	4%	2%	1%	1.76	1.55	
Process approach to writing (<i>N</i> = 345)*											
Language Arts	8%	30%	13%	25%	8%	7%	9%	1%	2.51	1.72	LA > SC: 1.02
Science	58%	19%	7%	5%	7%	3%	1%	0%	0.91	1.40	LA > SS: 0.89
Social Studies	40%	26%	15%	14%	3%	2%	0%	0%	1.15	1.31	
Total	33%	25%	11%	16%	7%	4%	4%	0%	1.70	1.73	

(table continues)

Table 3 (continued)

Writing instruction strategies	Never	Several times/year	Monthly	Several times/month	Weekly	Several times/week	Daily	Several times/day	<i>M</i>	<i>SD</i>	Effect size (<i>d</i>)*
Student use of self-monitoring strategies for performance and goals (<i>N</i> = 358)*											
Language Arts	10%	31%	17%	21%	8%	7%	6%	1%	2.30	1.70	LA > SC: 0.86
Science	51%	24%	10%	7%	5%	3%	1%	0%	0.96	1.40	LA > SS: 0.52
Social Studies	32%	28%	12%	19%	4%	2%	3%	0%	1.46	1.50	SS > SC: 0.34
Total	30%	28%	13%	15%	6%	4%	3%	0%	1.67	1.65	
Student collaboration to plan, draft, revise, edit (<i>N</i> = 358)*											
Language Arts	11%	32%	19%	23%	8%	5%	3%	0%	2.13	1.49	LA > SC: 0.58
Science	38%	33%	11%	6%	7%	4%	1%	0%	1.26	1.49	LA > SS: 0.51
Social Studies	25%	40%	14%	12%	5%	3%	0%	0%	1.41	1.34	
Total	24%	35%	15%	14%	7%	4%	1%	0%	1.64	1.48	
Strategies for editing (<i>N</i> = 356)*											
Language Arts	3%	26%	13%	32%	12%	8%	5%	1%	2.82	1.59	LA > SC: 1.74
Science	62%	25%	7%	3%	1%	2%	0%	0%	0.54	0.95	LA > SS: 1.17
Social Studies	30%	42%	11%	11%	4%	0%	1%	0%	1.16	1.22	SS > SC: 0.57
Total	30%	30%	10%	17%	6%	4%	2%	1%	1.63	1.63	
Strategies for revising (<i>N</i> = 357)*											
Language Arts	1%	27%	17%	34%	10%	8%	1%	2%	2.71	1.43	LA > SC: 1.84
Social Studies	58%	27%	9%	6%	0%	1%	0%	0%	0.55	0.84	LA > SS: 1.06
Science	25%	44%	14%	13%	3%	0%	1%	0%	1.29	1.24	SS > SC: 0.70
Total	26%	31%	13%	19%	5%	4%	1%	1%	1.63	1.50	
Student emulation of models of good writing (<i>N</i> = 358)*											
Language Arts	10%	39%	12%	18%	14%	3%	5%	0%	2.19	1.61	LA > SC: 1.06
Science	66%	21%	3%	4%	3%	3%	1%	0%	0.66	1.27	LA > SS: 0.69
Social Studies	38%	39%	11%	7%	2%	1%	1%	0%	1.15	1.41	SS > SC: 0.37
Total	36%	33%	8%	10%	7%	2%	3%	0%	1.39	1.58	
Sentence combining instruction (<i>N</i> = 355)*											
Language Arts	10%	33%	15%	23%	8%	10%	1%	0%	2.26	1.49	LA > SC: 1.58
Science	86%	8%	3%	0%	1%	0%	2%	0%	0.29	0.95	LA > SS: 1.20
Social Studies	65%	20%	3%	7%	2%	2%	1%	0%	0.66	1.16	SS > SC: 0.35
Total	50%	21%	8%	11%	4%	5%	1%	0%	1.17	1.54	
Total number of strategies used*											
Language Arts	—	—	—	—	—	—	—	—	15.88	1.90	LA > SC: 1.88
Science	—	—	—	—	—	—	—	—	9.85	4.12	LA > SS: 1.10
Social Studies	—	—	—	—	—	—	—	—	13.09	3.40	SS > SC: 0.89
Total	—	—	—	—	—	—	—	—	13.13	4.10	

Note. Total percentages may not equal 100 due to rounding. Effect size reported for statistical significance of post hoc comparisons. Scoring is as follows: 0 = never; 1 = several times/year; 2 = monthly; 3 = several times/month; 4 = weekly; 5 = several times/week; 6 = daily; 7 = several times/day. LA = language arts teachers; SC = science teachers; SS = social studies teachers.

* $p < .0006$ when teacher discipline was compared.

Of the 16 adaptations, the average teacher reported making 10 of them (see Table 4). There was, however, a statistically significant difference by discipline for total adaptations, with language arts teachers making more reported adaptations than science and social studies teachers did, and social studies teachers making more adaptations than science teachers did.

Most of the writing adaptations occurred infrequently (see Table 4), with only two being used by a majority of teachers at least once or twice a month (increase writing about what was read and extra instruction on text organization). The remaining adaptations occurred only once or twice a year for the majority of the teachers, except increase publishing of writing and extra handwriting instruction, as 73% and 87% of teachers never made such adaptations.

There was a statistically significant difference by discipline for 14 of the 16 adaptations (all $ps < .0001$; see Table 4). Science

teachers did not make any of the adaptations more frequently than teachers from the other two disciplines did. In contrast, language arts teachers reported making all 14 of these adaptations more often than science and social studies teachers did. This included providing additional instruction to weaker writers (in sentence construction, grammar, capitalization/punctuation, text organization, discipline-specific genres, as well as reteaching skills and strategies), extra assistance with writing (conferencing with teacher and peers as well as help from peers), greater emphasis on facilitating motivation (choose own topic, share writing with others, publish writing) and added help with writing content (graphic organizers and writing about what was read).

Although social studies teachers applied the following 10 adaptations less often than language arts teachers did, they reported applying them more often than science teachers did: extra instruction (in grammar, capitalization/punctuation, text organization,

Table 4
How Often Secondary Teachers Reported Adapting Writing Instruction for Struggling Writers

Writing adaptations	Never	1–2 times yearly	1–2 times monthly	1–2 times weekly	Daily	<i>M</i>	<i>SD</i>	Effect size (<i>d</i>)*
Students write about what they read (<i>N</i> = 356)*								
Language Arts	1%	6%	42%	40%	11%	2.54	0.82	LA > SC: 1.07
Science	21%	31%	29%	16%	3%	1.50	1.10	LA > SS: 0.39
Social Studies	5%	14%	41%	34%	5%	2.20	0.94	SS > SC: 0.68
Total	9%	16%	37%	30%	7%	2.10	1.05	
Teach ways of organizing text (<i>N</i> = 352)*								
Language Arts	6%	21%	47%	21%	6%	2.00	0.93	LA > SC: 0.97
Science	37%	31%	25%	5%	3%	1.05	1.03	LA > SS: 0.51
Social Studies	19%	35%	28%	15%	3%	1.49	1.07	SS > SC: 0.42
Total	20%	28%	34%	14%	4%	1.55	1.08	
Students complete writing at their own pace (<i>N</i> = 353)								
Language Arts	18%	30%	27%	15%	11%	1.69	1.23	
Science	31%	25%	23%	11%	9%	1.42	1.29	
Social Studies	27%	26%	26%	13%	9%	1.51	1.26	
Total	25%	27%	25%	13%	10%	1.55	1.26	
Teach written genres in content-area (<i>N</i> = 351)*								
Language Arts	6%	15%	44%	18%	17%	2.25	1.08	LA > SC: 1.37
Science	58%	21%	9%	9%	3%	0.76	1.10	LA > SS: 0.78
Social Studies	30%	28%	26%	10%	7%	1.36	1.20	SS > SC: 0.52
Total	29%	21%	28%	13%	9%	1.52	1.29	
Teach grammar skills (<i>N</i> = 358)*								
Language Arts	8%	16%	35%	22%	19%	2.30	1.17	LA > SC: 1.52
Science	66%	16%	12%	3%	3%	0.63	1.03	LA > SS: 1.03
Social Studies	48%	20%	17%	7%	8%	1.04	1.27	SS > SC: 0.35
Total	38%	17%	23%	12%	11%	1.41	1.37	
Teach punctuation/capitalization skills (<i>N</i> = 358)*								
Language Arts	6%	16%	39%	20%	19%	2.29	1.13	LA > SC: 1.65
Science	70%	14%	10%	3%	3%	0.54	0.98	LA > SS: 1.13
Social Studies	50%	22%	18%	4%	7%	0.97	1.20	SS > SC: 0.39
Total	39%	17%	24%	10%	10%	1.36	1.35	
Students use graphic organizer when writing (<i>N</i> = 356)*								
Language Arts	12%	20%	46%	19%	3%	1.82	0.99	LA > SC: 1.17
Science	60%	21%	11%	7%	1%	0.67	0.98	LA > SS: 0.34
Social Studies	26%	26%	30%	14%	4%	1.45	1.15	SS > SC: 0.73
Total	32%	22%	30%	14%	3%	1.35	1.14	
Re-teach writing skills or strategies previously taught (<i>N</i> = 355)*								
Language Arts	3%	27%	49%	15%	6%	1.92	0.88	LA > SC: 1.39
Science	62%	19%	14%	5%	1%	0.64	0.96	LA > SS: 0.65
Social Studies	27%	35%	27%	5%	5%	1.27	1.10	SS > SC: 0.61
Total	29%	26%	32%	9%	4%	1.33	1.11	
Conference with student about his/her writing (<i>N</i> = 352)*								
Language Arts	4%	41%	39%	13%	2%	1.68	0.84	LA > SC: 0.95
Science	42%	37%	18%	3%	1%	0.86	0.89	LA > SS: 0.41
Social Studies	17%	47%	28%	6%	3%	1.32	0.93	SS > SC: 0.51
Total	20%	41%	29%	8%	2%	1.31	0.94	
Students select their own writing topics (<i>N</i> = 357)*								
Language Arts	11%	35%	37%	15%	2%	1.64	0.94	LA > SC: 1.00
Science	48%	35%	13%	3%	1%	0.73	0.87	LA > SS: 0.34
Social Studies	21%	37%	32%	7%	2%	1.32	0.96	SS > SC: 0.64
Total	26%	36%	28%	9%	2%	1.25	1.00	
Students share their writing with peers (<i>N</i> = 356)*								
Language Arts	6%	38%	43%	11%	2%	1.65	0.84	LA > SC: 0.94
Science	48%	32%	14%	6%	1%	0.81	0.95	LA > SS: 0.57
Social Studies	28%	40%	23%	7%	1%	1.14	0.95	SS > SC: 0.35
Total	26%	37%	28%	8%	1%	1.24	0.97	
Teach sentence construction skills (<i>N</i> = 357)*								
Language Arts	13%	25%	34%	23%	5%	1.81	1.08	LA > SC: 1.55
Science	76%	17%	5%	1%	2%	0.36	0.76	LA > SS: 1.17
Social Studies	66%	22%	7%	2%	4%	0.58	1.01	
Total	48%	21%	17%	10%	4%	1.00	1.18	

(table continues)

Table 4 (continued)

Writing adaptations	Never	1–2 times yearly	1–2 times monthly	1–2 times weekly	Daily	<i>M</i>	<i>SD</i>	Effect size (<i>d</i>)*
Students conference with peers about their writing (<i>N</i> = 357)*								
Language Arts	17%	26%	42%	8%	1%	1.51	0.92	LA > SC: 1.04
Science	70%	13%	12%	5%	1%	0.54	0.94	LA > SS: 0.82
Social Studies	48%	30%	17%	4%	0%	0.77	0.89	
Total	43%	22%	28%	6%	1%	0.99	1.02	
Strong writer helps struggling writer (<i>N</i> = 356)*								
Language Arts	26%	37%	27%	8%	1%	1.22	0.98	LA > SC: 0.63
Science	67%	13%	13%	8%	0%	0.61	0.97	LA > SS: 0.54
Social Studies	59%	19%	19%	3%	1%	0.70	0.96	
Total	48%	24%	20%	7%	1%	0.88	1.01	
Students publish their writing (<i>N</i> = 352)*								
Language Arts	43%	34%	21%	1%	1%	0.82	0.86	LA > SC: 1.24
Science	97%	3%	1%	0%	0%	0.04	0.24	LA > SS: 0.80
Social Studies	87%	7%	4%	2%	0%	0.22	0.63	
Total	73%	16%	10%	1%	0%	0.40	0.73	
Teach handwriting skills (<i>N</i> = 358)								
Language Arts	84%	8%	6%	1%	1%	0.25	0.66	
Science	93%	4%	1%	1%	1%	0.12	0.52	
Social Studies	86%	7%	3%	1%	3%	0.29	0.85	
Total	87%	6%	4%	1%	1%	0.22	0.68	
Total number writing adaptations used (<i>N</i> = 360)*								
Language Arts	—	—	—	—	—	13.16	2.52	LA > SC: 2.06
Science	—	—	—	—	—	6.48	3.84	LA > SS: 1.28
Social Studies	—	—	—	—	—	9.40	3.32	SS > SC: 0.81
Total	—	—	—	—	—	9.95	4.31	

Note. Total percentages may not equal 100 due to rounding. Effect size reported for statistical significance of post hoc comparisons. Scoring is as follows: 0 = never; 1 = 1–2 times yearly; 2 = 1–2 times monthly; 3 = 1–2 times weekly; 4 = daily. LA = language arts teachers; SC = science teachers; SS = social studies teachers.

* $p < .0006$ when teacher discipline was compared.

discipline-specific genres, as well as reteaching skills and strategies), added emphasis on motivation (choose own topic and share writing with others), additional help with writing content (graphic organizers and writing about what was read), and greater assistance with writing (conferencing with teacher).

What Writing Assessment Practices Do High School Teachers Apply?

Using writing to assess content learning. Table 5 provides information on teachers' reported use of writing to assess content knowledge and how teachers assess their students' writing performance. In terms of using writing to assess content, this was a common practice among high school teachers, with 92% indicating they assessed content knowledge using short answer responses to questions, 78% through students writing a summary of material read, 75% via the use of written essay exams, 44% by administering standardized norm-referenced tests involving written responses, and 35% had students create a portfolio of class work.

The use of all but one of these assessment procedures (i.e., short answer response) differed by discipline (all $ps < .0001$; see Table 5). Post hoc analyses indicated that language arts teachers used summarizing, essay exams, standardized norm-referenced tests, and portfolios more frequently than science teachers did. They also used essay exams more often than social studies teachers did, who used such exams more often than science teachers did.

Thirty-four teachers (9%) identified additional ways they used writing to assess content in response to the open-ended question

(7 language arts teachers, 3 social studies teachers, and 24 science teachers). The following three categories emerged from these responses: lab reports (19 respondents), journal writing (12 respondents), and other (3 respondents). The categories listed under other included using the Cornell note-taking system, Powerpoint presentations, and vocabulary tests.

Evaluating students' writing. The majority of teachers indicated they evaluated students' writing, with 87% reporting they used rubrics/holistic scales and 68% noting they evaluated their students' writing via professional judgment (see Table 5). There was a statistically significant difference by discipline ($p < .0001$) for use of rubric/holistic scales. Language arts teachers were more likely to use this form of assessment than were science and social studies teachers.

We also asked teachers to identify other methods used to evaluate writing. Seventeen teachers (5%) responded (14 language arts teachers and 3 science teachers). The following four categories emerged from the teachers' responses: peer evaluation (10 respondents), self-evaluation (4 respondents), output by page or sentence (2 respondents), and plagiarism check (1 respondent).

Do High School Teachers Believe Writing Is Important Beyond High School?

This question was assessed with a single question (see Table 6, Item 3). The majority of teachers strongly agreed that writing is an essential skill for students after high school (84%). Another 14% of teachers moderately or slightly agreed with this statement.

Table 5
Teachers' Use of Assessment Procedures (N = 361)

Variable	No		Yes		Total		$\chi^2(2)$	ϕ
	N	%	N	%	N	%		
Writing to assess content								
Short answer response								
Language arts	9	6.2	137	93.8	146	40.4	1.56	
Science	10	8.3	111	91.7	121	33.5		
Social Studies	10	10.6	84	89.4	94	26.0		
Total	29	8.0	332	92.0				
Summary of reading*								
Language arts	22	15.1	124	84.9	146	40.4	19.85	LA > SC: .24
Science	43	35.5	78	64.5	121	33.5		
Social Studies	14	14.9	80	85.1	94	26.0		
Total	79	21.9	282	78.1				
Essay exams*								
Language arts	16	11.0	130	89.0	146	40.4	57.42	LA > SC: .42
Science	59	48.8	62	51.2	121	33.5		LA > SS: .36
Social Studies	14	14.9	80	85.1	94	26.0		SS > SC: .35
Total	89	24.7	272	75.3				
Standardized norm-ref tests*								
Language arts	64	43.8	82	56.2	146	40.4	21.21	LA > SC: .28
Science	87	71.9	34	28.1	121	33.5		
Social Studies	53	56.4	41	43.6	94	26.0		
Total	204	56.5	157	43.5				
Portfolio*								
Language arts	64	43.8	82	56.2	146	40.4	50.24	LA > SC: .38
Science	97	80.2	24	19.8	121	33.5		
Social Studies	75	79.8	19	20.2	94	26.0		
Total	236	65.4	125	34.6				
Evaluation of student writing								
Rubrics/holistic scales*								
Language arts	3	2.1	143	97.9	146	40.4	27.64	LA > SC: .33
Science	28	23.1	93	76.9	121	33.5		LA > SS: .26
Social Studies	15	16.0	79	84.0	94	26.0		
Total	46	12.7	315	87.3				
Professional judgment								
Language arts	48	32.9	98	67.1	146	40.4	0.91	
Science	40	33.1	81	66.9	121	33.5		
Social Studies	26	27.7	68	72.3	94	26.0		
Total	114	31.6	247	68.4				

Note. 0 cells have expected frequencies < 5. ϕ coefficient reported for statistical significance of chi-square comparisons. LA = language arts teachers; SC = science teachers; SS = social studies teachers.

* $p < .0006$.

Do High School Teachers Believe Students Possess and Will Acquire Needed Writing Skills?

The final three items in Table 6 examined this question. Most of the teachers agreed at least somewhat that their students are taught in high school the writing skills needed for success in college (78% of respondents) and the workplace (77% of respondents). They were less positive, however, about whether students have the writing skills needed to do the work in their class, as only 51% of respondents indicated some level of agreement with this idea.

Are High School Teachers Prepared to Teach Writing?

Table 7 reports how much formal preparation teachers received to teach writing in general during college and after college. Seventy-one percent of all teachers indicated that they received minimal to no preparation to teach writing during college (preservice preparation), and 44% continued to report the same low level

of preparation following college (in-service preparation). When we just asked about their preparation to teach writing within their content area or discipline (see the first two items in Table 6), less than one half (47%) of the teachers agreed to some extent that they had received adequate preservice preparation, whereas 58% agreed to some extent that they had received adequate in-service preparation.

Although language arts, science, and social studies teachers did not differ statistically in terms of perceptions of adequacy of preservice preparation in their specific disciplines, there were statistically significant differences by disciplines for preparation to teach writing in general (preservice and in-service) and in-service writing preparation in the discipline (all $ps < .0001$). In all of these cases, language arts teachers felt more prepared than science or social studies teachers did (see Tables 6 and 7). Social studies teachers also felt more prepared than science teachers did in terms of their in-service preparation to teach writing in general and in the discipline.

Table 6
Importance of Writing and Perceptions of Students' Competence

Variable	Strongly disagree	Moderately disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree	<i>M</i>	<i>SD</i>	Effect size (<i>d</i>)*
I received adequate preparation in my teacher education program to teach writing in my content area (<i>N</i> = 355)									
Language Arts	15%	13%	15%	24%	22%	13%	2.61	1.61	
Science	29%	17%	13%	14%	22%	5%	1.99	1.67	
Social Studies	20%	25%	15%	19%	20%	2%	2.00	1.49	
Total	21%	17%	14%	19%	21%	7%	2.25	1.63	
I have received adequate in-service training to teach writing in my content area (<i>N</i> = 356)*									
Language Arts	10%	9%	9%	15%	35%	23%	3.26	1.60	LA > SC: 0.81
Science	20%	26%	13%	20%	15%	5%	1.99	1.53	LA > SS: 0.46
Social Studies	12%	17%	14%	23%	27%	7%	2.55	1.51	SS > SC: 0.37
Total	14%	17%	12%	19%	26%	13%	2.65	1.64	
Writing is an essential skill for students after high school (<i>N</i> = 358)									
Language Arts	1%	1%	0%	1%	9%	87%	4.76	0.81	
Science	1%	0%	0%	2%	14%	83%	4.78	0.61	
Social Studies	0%	0%	1%	3%	14%	82%	4.76	0.56	
Total	1%	1%	0%	2%	12%	84%	4.77	0.69	
Students are taught the writing skills in high school needed to be successful in college (<i>N</i> = 357)									
Language Arts	3%	7%	6%	15%	44%	26%	3.67	1.27	
Science	8%	7%	13%	21%	34%	17%	3.16	1.47	
Social Studies	7%	5%	11%	27%	33%	17%	3.27	1.37	
Total	6%	6%	10%	20%	38%	20%	3.40	1.38	
Students are taught the writing skills in high school needed to be successful in the workplace (<i>N</i> = 357)									
Language Arts	3%	10%	8%	22%	40%	17%	3.38	1.29	
Science	5%	8%	12%	18%	43%	15%	3.31	1.35	
Social Studies	5%	4%	15%	23%	38%	15%	3.28	1.31	
Total	4%	8%	11%	21%	40%	16%	3.33	1.31	
My students have the writing skills they need to do work in my class (<i>N</i> = 358)									
Language Arts	11%	15%	16%	27%	26%	6%	2.60	1.45	
Science	10%	18%	19%	16%	28%	9%	2.60	1.53	
Social Studies	13%	23%	22%	24%	16%	3%	2.17	1.38	
Total	11%	18%	18%	22%	23%	6%	2.49	1.46	

Note. Total percentages may not equal 100 due to rounding. Effect size reported for statistical significance of post hoc comparisons. Scoring is as follows: 0 = *strongly disagree*; 1 = *moderately disagree*; 2 = *slightly disagree*; 3 = *slightly agree*; 4 = *moderately agree*; 5 = *strongly agree*. LA = language arts teachers; SC = science teachers; SS = social studies teachers.

* $p < .0006$ when teacher discipline was compared.

We also conducted six hierarchical regression analyses to examine whether teachers' perceptions of their preparedness to teach writing predicted their use of evidence-based instructional practices as well as the number of different adaptations they applied with struggling writers. One half of these analyses focused on total number of evidence-based practices teachers reported applying, as we examined the responses of language arts, science, and social studies teachers separately. The other half concentrated on the total number of different adaptations teachers reported making, with the responses of teachers for each of the three disciplines again being examined separately.

For each regression analysis, we first controlled for variability associated with teacher experience (years teaching), gender, classroom compositions (i.e., proportion of students in their class with special needs or who were English language learners), as well as

teachers' beliefs about the importance of writing (Table 6, Item 3) and whether students have and will acquire needed writing skills (Table 6, Items 4–6). These control items were first entered into the regression equation as a block. Next we entered the four items examining teacher preparedness to teach writing (Tables 6 and 7, Items 1 and 2 in each table) as a block. This allowed us to examine whether teachers' perceptions of preparedness accounted for a statistically significant increase in amount of variance, beyond the variance accounted for by the control variables. For each regression analysis, we set the critical alpha value using Bonferroni correction ($\alpha = .05/6$) and rejected the null hypothesis if the p value was less than .008.

For the language arts teachers, neither the control variables nor the four teacher preparation items accounted for a statistically significant amount of variance in predicting reported use of evidence-based practices or the number of adaptations. For

Table 7
Preparation to Teach Writing (N = 360)

Variable	None	Minimal	Adequate	Extensive	<i>M</i>	<i>SD</i>	Effect size (<i>d</i>)*
Formal preparation during college (preservice)*							
Language Arts	12%	49%	29%	10%	1.36	0.82	LA > SC: 0.53
Science	28%	51%	21%	1%	0.95	0.72	LA > SS: 0.45
Social Studies	22%	54%	22%	1%	1.02	0.70	
Total	20%	51%	24%	4%	1.13	0.78	
Formal preparation after college (in-service)*							
Language Arts	1%	22%	50%	27%	2.02	0.73	LA > SC: 0.96
Science	12%	54%	27%	8%	1.30	0.77	LA > SS: 0.71
Social Studies	4%	43%	49%	4%	1.53	0.65	SS > SC: 0.32
Total	6%	38%	42%	14%	1.65	0.79	

Note. Total percentages may not equal 100 due to rounding. Effect size reported for statistical significance of post hoc comparisons. Scoring is as follows: 0 = none; 1 = minimal; 2 = adequate; 3 = extensive. LA = language arts teachers; SC = science teachers; SS = social studies teachers.

* $p < .0006$ when type of discipline was compared.

evidence-based practices, the control variables accounted for 8% of the variance, $F(8, 110) = 1.24, p = .28$, whereas the addition of the preparedness items accounted for another 4% of the variance, $F(4, 106) = 1.30, p = .28$. The finding was similar for number of adaptations, as the control variables accounted for 5% of the variance, $F(8, 110) = 0.77, p = .63$, and the preparedness items captured another 4% of the variance, $F(4, 106) = 1.19, p = .32$.

For the science teachers, the control variables did not account for a statistically significant amount of variance, whereas the addition of the preparedness items did. The addition of the four preparedness items to the equation, however, did result in a statistically significant increase in variance for both teaching constructs. The control variables accounted for 19% of the variance in reported use of evidence-based practices, $F(8, 83) = 2.36, p = .02$, with the inclusion of the preparedness items accounting for an additional 15% of the variance, $F(4, 79) = 4.50, p = .002$. Likewise, 11% of the variance in reported adaptations were accounted for by the control variables, $F(8, 83) = 1.25, p = .28$, with another 21% of variance accounted for by the addition of the four preparedness items, $F(4, 79) = 6.11, p < .001$.

For the social studies teachers, the control variables did not account for a statistically significant amount of variance, whereas the addition of the preparedness items did. For reported use of evidence-based practices, the control variables accounted for 7% of the variance, $F(8, 68) = 0.58, p = .79$, but the addition of the four preparedness items accounted for an additional 22% of variance, $F(4, 64) = 4.94, p = .002$. For reported adaptations, the control variables accounted for just 3% percent of the variance, $F(8, 68) = 0.28, p = .97$, but the inclusion of the preparedness items accounted for an additional 25% of variance, $F(4, 64) = 5.51, p = .001$.

Thus, language arts teachers' perceptions of their preparedness to teach writing did not predict their reported teaching behaviors, once other predictors were first controlled. However, this was not the case for science and social studies teachers, as their perceptions about their preparedness to teach writing accounted for unique and significant variance beyond the variability accounted for by their teaching experience, gender, composition of their classroom, and beliefs about the importance of writing as well as whether their students have and will acquire needed writing skills.

Discussion

Concerns about high school students' writing and the instruction they receive are not new. Such concerns were evident in a 1981 study by Applebee examining writing practices in secondary schools in the United States. In the forward to this report, Cooper (1981) outlined "a high school writing program certain to fail" (p. xi). In such a program, students rarely produce written text longer than two or three sentences. They mostly write to convey information or demonstrate their knowledge, seldom using writing as a means to develop new insights, clarify information, examine personal experiences, stretch the imagination, or persuade others. In addition, teachers provide students with little instruction or help with the writing process. Based on Applebee's findings, Cooper indicated that this was the standard writing program of the day.

Although the current study differs considerably from Applebee's (1981) investigation in scope and focus, it also examined the teaching of writing at the high school level. Such a study is timely because of recent calls to reform the teaching of writing in U.S. schools (National Commission on Writing, 2003). A contemporary analysis of high school writing practices provides information useful for determining what needs to be done as well as examining whether some of the already proposed solutions (e.g., National Commission on Writing, 2003) fit the problem.

The findings from this investigation and Applebee and Langer's (2006) recent summary of high school writing instruction (based on questions from NAEP assessments over time) indicate that there is reason to be concerned about contemporary practices. Fortunately, the situation is not as bleak as the scenario painted by Cooper in 1981. Nevertheless, the evidence from our study shows that reform is needed, and it needs to be multifaceted.

What Do High School Students Write?

In examining high school writing practices, we begin with the assumption that the teaching of writing is a shared responsibility. It involves not only language arts teachers but students' other content teachers across the high school years. Why do we assume that writing should be an integral part of all subject-matter instruction? First, writing can facilitate the learning of content material (see Bangert-Drowns et al., 2004; Graham & Perin, 2007a). Sec-

ond, teachers in each discipline need to be involved in teaching writing, as its purposes and characteristics differ from one domain to the next (Bazerman, 1988).

We further contend that high school students should write frequently and for different purposes, but this writing must go beyond writing without composing (e.g., taking notes and writing short answers to questions) and writing to show what one knows (Applebee, 1981). This includes more sustained writing designed to explore and gain understanding of content material as well as writing for personal, imaginative, and persuasive purposes. If students are to reap the benefits of writing in each discipline, they must write. We do not suggest that the amount of writing students do in each discipline should be equivalent, but it should occur often and require the relatively frequent production of longer pieces of text. With these assumptions in mind, we first identify what high school students write most frequently and the purposes of these assignments. Next, we examine how writing assignments differ by discipline.

Most common writing activities and purposes. What types of writing activities were students assigned most frequently? We asked teachers to indicate how often they assigned 22 different writing activities. A majority of the participating teachers reported they used 12 of them (55%) at least once a year. This included activities involving writing without composing (e.g., completing worksheets), writing to understand material read (e.g., summarizing text), personal writing (e.g., personal narratives), informative writing (e.g., five-paragraph essay), and persuasive writing (e.g., persuasive essay). Thus, when all respondents were considered together, students typically wrote for a variety of purposes across the school year. However, many of these activities did not occur frequently.

If we examine only the most frequently occurring writing activities, the purposes for which high school teachers use writing narrows considerably. The four most common writing activities (used once a week or more often by the majority of teachers) were writing short answer responses to homework, responding to material read, completing worksheets, and summarizing material read. If we extend this time frame to once a month or more often, two additional items are added to our compilation of most frequent writing activities: journal entries and lists. Considered together, these six assignments mostly involve writing without composing (short answers, worksheets, and lists) and using writing to understand material read (responding to reading and summarizing). They require little analysis, interpretation, or actual writing.

Differences by discipline. There were considerable differences between language arts, science, and social studies teachers in the types of writing they assigned. However, these differences were relatively predictable. For example, language arts teachers were more likely than science and social studies teachers were to use writing for personal and imaginative purposes (short story, poem, stage/screen play, autobiography, personal narrative, and journal entries) and to respond to material read (book reports and literary analysis). Applebee (1981) also reported that language arts teachers stressed personal and imaginative writing experience.

Social studies teachers were also more likely than science teachers were to report using writing for personal and imaginative purposes (short story, personal narrative, and autobiography) and responding to material read (including book report and answering document-based questions), whereas language arts and social stud-

ies teachers reported using three specific informational writing assignments (five-paragraph essay, persuasive essay, and biography) more often than science teachers did. In contrast, the only writing activities science teachers reported using more often than teachers from the other two disciplines did involved completing worksheets, writing step-by-step instructions, and completing lab reports. Applebee (1981) reported a similar finding for the science teachers in his study.

We further found that a sizable proportion of the participating teachers seldom assigned activities that clearly involved writing multiple paragraphs (we identified 8 such activities from the 22 that we directly assessed). Almost one third of language arts and social studies teachers did not assign such an activity monthly (the percentages rose to 71% and 77%, respectively, when the time frame was weekly). Moreover, a large proportion of science teachers (77%) did not assign such an assignment monthly, and almost all of them (92%) did not do so weekly.

It is important to note that our study did not directly address how specific writing activities were used by teachers in the different disciplines. Even though there was little difference in how often language arts and social studies teachers reported assigning short stories, for instance, we suspect that this assignment served different purposes in the two disciplines. Additional research is needed to determine not only what activities high school teachers assign but why they assign them.

Recommendations. The findings from this study are consistent with the recommendation by the National Commission on Writing (2003) to increase how much high school students write, but with the caveat that we need to increase specific types of writing. This includes writing longer text and increasing the frequency of assignments that involve analysis and interpretation. As Applebee and Langer (2006) noted in their analysis, students are rarely assigned activities of any significant complexity and length, and these are just the types of writing they are expected to do in advanced placement classes, college, and higher salaried jobs. Not only do we need to increase specific types of writing but this increase must also take into account how writing is used in each discipline. Finally, extra attention needs to be directed to the area of science, as teachers in this discipline placed less overall emphasis on writing, especially the composition of longer text. Of course, such recommendations should not be applied in an unthinking manner, as there was considerable variability between participants' responses (there were some teachers, for example, who frequently reported assigning multiparagraph writing activities).

How Do High School Teachers Teach Writing?

We indicated above that teaching high school students to write is a shared responsibility. Although language arts teachers should shoulder some of this responsibility (as writing is one of the most basic elements of this discipline; Sperling & DiPardo, 2008), science, social studies, and other major subject-matter teachers should also devote significant attention to the teaching of writing if they expect students to learn how to write within their discipline. Teaching writing in each discipline should further involve the use of evidence-based instructional practices, assessment of students' writing progress, and instructional adjustments for students who experience difficulties. These teaching practices must be applied

on a regular basis in order to maximize their effectiveness (Pressley et al., 2006).

Most common teaching procedures. Two thirds of the participating teachers indicated they used all but two of the identified evidenced-based practices at least several times during the school year. The two exceptions, sentence combining and emulating good models of writing, were applied at least several times a year by one half or more of the teachers. Although most teachers indicated they used these procedures, they did not apply them frequently. Teachers averaged using the three most common evidence-based practices (praise/reinforcement, direct instruction methods, and establishing writing goals) just several times a month. They averaged using the next three most common evidence-based practices (writing as a learning tool, prewriting, and word processing) only once a month.

A majority of the teachers also reported making all but two (publishing writing and extra handwriting instruction) of the listed adaptations for struggling writers at least once or twice during the school year. As with evidence-based practices, however, teachers made adaptations infrequently. Teachers averaged using the most frequent adaptation (having struggling writers write about material read) just once or twice a month. They averaged using most of the remaining adaptations only once or twice a year.

Why were these teaching procedures (evidenced-based instruction and adaptations for struggling writers) applied so infrequently? One possible explanation is that the participating teachers were not familiar with these procedures. However, this seems unlikely as most teachers used almost all of them at some point during the year.

Another explanation is that teachers did not frequently apply these procedures because they used a commercial program to teach writing, and the program placed little emphasis on evidence-based practices or accommodations. This explanation is also unlikely, as only 1 in 10 teachers reported using a commercial writing program. We were particularly surprised that only one in five language arts teachers reported using a commercial writing program. These findings need to be confirmed in future research. If they are confirmed, it is important to determine why high school writing instruction is not supported by the use of commercial materials.

It is also possible that teachers did not use these teaching procedures more frequently because they did not value them. We found in a previous study (Graham, Papadopolou, & Santoro, 2006) that primary grade teachers' use of a writing accommodation was related to their views on its effectiveness, suitability for struggling writers, possible negative impact, knowledge of how to implement, and time needed to implement. After controlling for teacher experience, class size, teacher efficacy, percent of students with writing difficulties, and percent of students with special needs, we found that these five dimensions accounted for 29% additional variability in teachers' reported use of adaptations. Future researchers need to examine high school teachers' views of the acceptability of evidence-based writing practices and adaptations.

A fourth explanation is that teachers did not frequently apply evidence-based practices or accommodations because they did not spend much time actually teaching writing. If this was the case, there would be few opportunities to apply such techniques. Unfortunately, we did not ask teachers to indicate how much time they devoted to teaching writing. It is interesting to note, however,

that only 3% of the participating teachers indicated that they used any other writing practices. If this is accurate, it suggests that most teachers did not devote a great deal of time to writing instruction. This may also help to explain, at least in part, why commercial writing programs were used so infrequently (i.e., there is little need for a commercial program if writing is taught infrequently). Additional research is needed to determine how much time high school teachers in each discipline devote to writing instruction.

On a more positive note, we did find that almost all of the participating teachers indicated they assessed students' writing. Six out of every seven teachers used rubrics/holistic scales and professional judgment to assess students' writing. Most of the teachers also reported that they used writing to assess content learning, with 75% or more of all teachers applying the following assessment techniques: answering content questions with short written responses, writing a summary of material read, and completing written essay tests. Unfortunately, we did not ask teachers how often they apply these assessment procedures. Thus, it is possible that they used them infrequently, just as they infrequently made adaptations or used evidence-based practices. Future researchers need to examine not only whether these procedures are used but how frequently they are applied.

Differences by discipline. Identical to the findings for types of writing activities assigned, there were considerable differences between language arts, science, and social studies teachers in their reported use of evidence-based writing practices, adaptations for struggling writers, and use of assessment procedures. Across all of these procedures, however, a consistent picture emerged. Language arts teachers placed more emphasis than science and social studies teachers did on teaching writing skills and processes, facilitating the process of writing, specifying expectations, evaluating students' writing, and providing students with mechanisms for obtaining feedback. Social studies teachers also placed more emphasis on each of these than science teachers did, except for the evaluation of students' writing.

When compared to science and social studies teachers, language arts teachers more often reported teaching writing skills and processes to their whole class as well as providing extra instruction (i.e., adaptations) in these areas to struggling writers. These two forms of instruction covered the teaching of grammar (to the whole class and with struggling writers), usage (with struggling writers), sentence construction (with the whole class and struggling writers), text organization (with struggling writers), discipline-specific genres (with struggling writers), and strategies for planning, revising, and editing (with the whole class). Although social studies teachers did not provide such instruction as frequently as language arts teachers did, they applied these teaching procedures more often than science teachers did. The only exceptions involved teaching grammar to the whole class and providing extra instruction in sentence construction to struggling writers.

Language arts teachers also reported doing more than social studies and science teachers did to support the writing of their class in general and struggling writers in particular. These two forms of support included making expectations clear (by providing models of good writing and establishing goals for writing with the whole class), supporting the generation and organization of writing ideas (prewriting activities with the whole class as well as graphic organizers and writing about material read with struggling writers), providing direct assistance with writing (peers working together in

the class as well as struggling writers receiving help from stronger writers and help through conferencing from the teacher and peers), facilitating the writing process (process approach to writing and use of word processor with the whole class), increasing motivation (choice, sharing, and publishing with struggling writers), and providing feedback (via self-monitoring and praise/reinforcement with the whole class). Language arts teachers further reported that they administered essay exams and used rubrics/holistic scales more often than the other two groups of teachers did.

Again, social studies teachers were more likely than were science teachers to report providing the same general types of supports applied by language arts teachers, but they did not apply as many of these supports as their language arts counterparts (including use of writing goals, grammar instruction, word processing, process approach, students working together with the whole class as well as help from stronger writers, conferencing with peers, and publishing for struggling writers).

As with the writing activities assigned by teachers, our survey was not detailed enough to determine how teachers in each discipline applied the listed evidence-based practices, adaptations, or assessments procedures. Future researchers need to examine more specifically how teachers from each discipline apply these procedures. It must further be noted that the majority of language arts teachers reported teaching grammar several times a month or more often (grammar was taught very infrequently by most science and social studies teachers). Concerns have been repeatedly raised in the literature about the effectiveness of grammar instruction (see Andrews et al., 2006; Graham & Perin, 2007b), so additional research is needed to determine exactly how it is taught by teachers and why they teach it. In addition, it must be recognized that some of the teaching approaches we assessed may not be viewed as particularly useful by teachers in some disciplines (e.g., science teachers may see little value in establishing a process approach to writing in their classroom).

Recommendations. The findings from this study raise several concerns about writing instruction for high school students. Although teachers indicated that they applied evidence-based writing practices and made many adaptations for struggling writers, they did neither of these things frequently. The effectiveness of these practices is likely compromised if they are not applied regularly (Pressley et al., 2006). For example, the average number of times that teachers taught students how to use planning, revising, or editing strategies was less than once a month. Teaching such processes has proven to be very effective in improving the quality of what adolescents write (see Graham & Perin, 2007a, 2007b; Rogers & Graham, in press). However, in the studies that validated such instruction, teaching was not carried out periodically. Rather, students were typically involved in a series of instructional sessions over the course of 2 to 4 weeks, where they learned the rationale for using the strategy (including when and where to use it), teachers modeled how to use the strategy (sometimes repeatedly), teachers scaffolded students' use of the strategy until they could apply it independently, and students learned how to apply it effectively in different situations. It is not reasonable to expect that evidence-based practices will be effective if the integrity of their implementation is seriously undermined or if they are applied infrequently (previous research has shown that students' writing gains are associated with how frequently evidence-based practices are applied; see Sadoski, Willson, & Norton, 1997). Therefore,

high school teachers need to apply evidence-based practices as well as adaptations for struggling writers more often. It is equally important that these procedures are applied with integrity (as closely as possible to how they were implemented in studies where their use was validated).

Increased and appropriate application of these teaching procedures needs to occur in each of the disciplines studied but especially in the area of science. Just as science teachers did not ask their students to do much writing, they directed very little attention to the teaching of writing (at least in terms of the practices we surveyed). One possible reason why science teachers provided so little writing instruction is that they viewed writing as less important than teachers from other disciplines did. However, we found that almost all of the participating science (83%), social studies (82%), and language arts (87%) teachers strongly agreed that writing is an essential skill for students after high school. It is also possible that science teachers devoted less attention to writing because they believed that their students already possessed needed writing skills. Again, this was not the case, as 47% of science teachers indicated that their students did not have the writing skills needed for their class. Third, science teachers may not devote much attention to writing or writing instruction as they do not view this as their responsibility. Unfortunately, we did not ask the participating teachers any questions concerning this issue. A fourth explanation is that the participating science teachers were not as well prepared to teach writing as the other subject-matter teachers were. We examine this proposition in the next section.

It is important to note that the responses of social studies teachers, like language arts teachers, showed that they devoted some attention to teaching writing skills/processes as well as facilitating the process of writing for their students. If high school writing instruction is indeed a shared responsibility, then it is important to reinforce this and look for ways to enhance it.

One of the recommendations made by the National Commission on Writing (2003) was that schools need to increase their use of technology as a tool for advancing the learning and teaching of writing. We only asked one question pertinent to this recommendation. On average, teachers reported that students used word processing to complete writing assignments a little less than once a month.

Are High School Teachers Prepared to Teach Writing?

If high school teachers are to assign writing activities that facilitate content learning and foster students' writing development, as well as provide effective writing instruction (using evidence-based practices, assessing students' progress, and adjusting instruction as needed), they must receive proper preparation to teach writing. The responsibility to provide such preparation rests in part with college teacher preparation programs. It also rests on the efforts of school districts to provide in-service preparation as well as the efforts of individual teachers to obtain needed information.

College preparation. As a group, the participating teachers were not positive about the quality of the preparation they received to teach writing from the colleges or universities they attended. Seventy-one percent of them indicated that they received either no or minimal formal preparation to teach writing in their college teacher education program. When we asked the question in a slightly different manner, focusing on preparation to teach writing

in their content area, 52% still indicated that they received inadequate preparation through their teacher education program. For the first item, we found that language arts teachers were more positive about their preparation than science or social studies teachers were, but 61% of them still indicated they received minimal to no preparation. No difference was found for the second item.

In-service preparation. When preparation beyond college was considered, the respondents were more positive about their preparation to teach writing, but a sizable minority still had concerns. For example, 77% percent of language arts and 53% of social studies teachers viewed their in-service preparation after college (e.g., workshops attended, in-service preparation, assistance from other teachers, and articles and books read) as either adequate or extensive. Only 37% of science teachers shared this same view, however. When we asked the question in a similar fashion, but concentrated on teaching writing in their content area, the outcome was similar, as 73%, 57%, and 40% of language arts, social studies, and science teachers, respectively, agreed that their in-service preparation was adequate.

Relationships between teacher preparedness and instructional practices. For science and social studies teachers, their perceptions of their preparedness to teach writing predicted how frequently they reported applying evidence-based practices and making adaptations for struggling writers, after variance due to teaching experience, gender, class composition, estimates of students' writing skills for current and future tasks, and perceived importance of writing for students' future success. This was not the case for language arts teachers (who were generally more positive about their preparation than teachers from the other two disciplines were).

Recommendations. The National Commission on Writing (2003) recommended that colleges and universities as well as school districts need to do a better job of preparing teachers to teach writing. The data from this study support that conclusion with high school teachers. Teacher education programs did not fare well, as more than one half of all teachers indicated that their preparation from these institutions was inadequate. Although most language arts teachers indicated that their in-service preparation to teach writing was adequate, one in four did not agree. The situation is most worrisome for science teachers, as approximately 60% of them rated their in-service preparation as inadequate. This may help to explain why they assigned fewer writing activities and devoted less attention to the teaching of writing. Additional research is needed to determine the frequency, content, and effectiveness of both preservice and in-service writing preparation for high school teachers. Finally, the importance of improved preparation for science as well as social studies teachers was further supported by the finding that teachers in these two disciplines who believed they were better prepared reported using evidence-based practices and making adaptations for struggling writers more frequently.

Limitations

Much of the present study was based on the assumption that high school teachers are aware of the elements of their teaching and can relate this knowledge to questions about how they teach writing. Although there is evidence that teachers can provide an accurate description of their literacy practices (see, e.g., Bridge & Heibert, 1985; DeFord, 1985; Pressley et al., 1996), the findings from this study need to be replicated as well as supplemented by

research where practices are observed and not just reported. Nonetheless, this study is the only available contemporary investigation that looks at high school writing instruction in a systematic fashion nationwide, providing information for determining what needs to be done to improve writing instruction at the high school level.

It is important to note that the current investigation primarily focused on classroom practices. We did not examine other factors, such as schoolwide, district, or state policies, that shape writing instruction. We also did not examine all possible aspects of classroom writing practices. This would be impossible in a survey study, as very few teachers would willingly complete such a questionnaire.

Another weakness of this study is that the writing activities and practices included in our survey were not accompanied by extensive descriptions. Based on our field testing of the instrument, we believe that teachers understood the basic concept underlying each item. However, this does not mean that each item meant exactly the same thing to teachers in each discipline or at each grade level. For example, although we feel confident that teachers know what was meant by a research paper, we are equally certain that their views on the focus, scope, and size of such a writing activity were not identical. We also were unable to determine whether teachers applied a practice appropriately or in the same way. In addition, there is no way for us to know whether the practices teachers reportedly applied were effective. This would have required the use of a different research methodology.

We further need to indicate that the evidence-based practices included in this study have not been validated with students in each of the three disciplines studied. In fact, the database for these practices is thin (Graham & Perin, 2007b), as they have not been suitably tested with different types of students or even students at all grade levels. We suspect that the value of most evidence-based practices differs depending on subject-matter area, teacher, students, grade level, and the interaction between these factors. This likely applies to the type of adaptations teachers make for weaker writers as well.

Although there were no statistically significant differences between responders and nonresponders in terms of gender and geographic location, language arts teachers were more likely to complete the survey than social studies teachers were. Thus, language arts teachers were overrepresented, and social studies teachers were underrepresented. It is further possible that those who completed the survey and those who did not differed in other unspecified ways.

Some caution must also be exercised when generalizing the findings from this study. As a group, the teachers were mostly White, experienced, and highly educated teachers in suburban schools. Because separate findings were not presented for any variable except teachers' discipline, it would be inappropriate to assume the findings presented here accurately represent writing practices in Southern urban school districts, for instance.

Although we draw conclusions about writing practices nationwide, it is important to recognize an additional limitation. When all teachers were considered together, sampling error ranged from $\pm 3.5\%$ to 5%, depending upon type of item. When the focus was on a specific discipline, such as science, the sampling error was larger, as the sample was smaller.

Summary

Although additional replication is needed, the findings from this study indicate that contemporary high school writing instruction is in need of reform and that such reform must be multifaceted. Although our findings represent only a single source of information on high school writing practices, we cautiously offer four recommendations. One, the process of composing longer text should become a more common activity in high school classrooms in general, and students should spend more time in engaging in writing that involves analysis and interpretation. Two, teachers should apply evidence-based writing practices and make adaptations for struggling writers on a regular basis instead of periodically. In addition, these teaching practices should be applied with fidelity. Three, teacher education programs and school districts should do a better job of preparing teachers to teach writing to high school students. Four, the first three recommendations should be tailored to meet the needs of each major discipline. For example, writing activities, instructional procedures, and teacher preparation needs are not the same for each subject-matter area, and reform efforts should reflect these differences. Likewise, some disciplines, such as science, will require a more concerted effort to reform writing practices than other areas will, such as language arts.

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(Appendix follows)

Appendix

High School Writing Practice Survey

Part I: Background information

1. Please ✓ check all that apply

a. My gender is <input type="checkbox"/> Male <input type="checkbox"/> Female
b. My ethnic background is: <input type="checkbox"/> African American <input type="checkbox"/> American Indian <input type="checkbox"/> Asian American <input type="checkbox"/> Caucasian <input type="checkbox"/> Hispanic <input type="checkbox"/> Other
c. Content area(s) I currently teach: <input type="checkbox"/> Language Arts/English <input type="checkbox"/> Science <input type="checkbox"/> Social Studies <input type="checkbox"/> Other: _____
d. The grade(s) I currently teach are <input type="checkbox"/> 9 th <input type="checkbox"/> 10 th <input type="checkbox"/> 11 th <input type="checkbox"/> 12 th
e. I have completed the following degrees (✓ Check all that apply, and fill in degree major) <input type="checkbox"/> Associate's Degree in _____ <input type="checkbox"/> Bachelor's Degree in _____ <input type="checkbox"/> Master's Degree in _____ <input type="checkbox"/> Other Degree in _____

2. Please write total years teaching at secondary level: _____
3. Please circle a, b, or c: My school is mostly (a) urban, (b) suburban, or (c) rural.
4. Please write total number of students in your school: _____
5. What percentage of students in your content-area classroom(s) receive special education services? _____%
6. What percentage of students in your content-area classroom(s) are English language learners (ELL)? _____%
7. Do you use commercial programs/curriculum to teach writing? ____ Yes ____ No
 If you checked yes, please write down the names of the commercial materials in the space below.
8. How much formal preparation on teaching writing have you received in teacher education courses during college?
 None Minimal Adequate Extensive
9. How much formal preparation on teaching writing have you received after college (e.g., workshops, reading books and articles, assistance from another teacher, in-service preparation at your school, and so forth)?
 None Minimal Adequate Extensive

Part II: Writing Assignments

10. Please circle how often students do each of the following writing activities in your content-area classes. If you never do this kind of activity, circle never. A completed item is shown below. This item shows that the respondent has students do a "technical report" once a year.

Example:

Technical Report	NEVER	<u>ONCE /YEAR</u>	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
a. Autobiography	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
b. Book report	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
c. Biography	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
d. Business letter	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
e. Copying text	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
f. Completing worksheets	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
g. Develop step-by-step instructions	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
h. Email correspondence	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
i. Journal entry	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
j. Lists	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
k. Memo	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
l. Personal narrative	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
m. Persuasive essay	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
n. Poem	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
o. Powerpoint presentation	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
p. Research paper	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
q. Short answer response on homework	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
r. Short story	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
s. Stage/screen play	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
t. Summary of material read	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
u. Written response to material read	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
v. 5-paragraph essay	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY

If you do other kinds of writing assignments, write each below and then circle how often you do them (using the same scale as above):

_____	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
_____	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
_____	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY
_____	NEVER	ONCE /YEAR	ONCE/SEMESTER	ONCE/QUARTER	ONCE/MONTH	ONCE /WEEK	SEVERAL TIMES/WEEK	DAILY

(Appendix continues)

Part III: Writing Instruction & Writing Activities

11. The following writing methods or writing activities may or may not apply to your classroom or content area. Please fill out this section as best you can by circling how often you implement the following. If you do not use the writing activity, please circle never. A completed item is shown below. This item shows that the respondent teaches strategies for editing "several times a month."

EXAMPLE:

	NEVER	SEVERAL TIMES A YEAR	MONTHLY	SEVERAL TIMES A MONTH	WEEKLY	SEVERAL TIMES A WEEK	DAILY	SEVERAL TIMES A DAY
Teach strategies for editing				SEVERAL TIMES A MONTH				
a. Teach strategies for planning how or what to write				SEVERAL TIMES A MONTH				
b. Teach strategies for revising written material				SEVERAL TIMES A MONTH				
c. Teach strategies for editing written material				SEVERAL TIMES A MONTH				
d. Teach strategies for summarizing reading material into a written product				SEVERAL TIMES A MONTH				
e. Establish specific goals for what students are to include in their written assignments				SEVERAL TIMES A MONTH				
f. Have students collaborate when writing (students work together to plan, draft, revise, and edit)				SEVERAL TIMES A MONTH				
g. Have students complete writing assignments using word processing				SEVERAL TIMES A MONTH				
h. Teach students how to write more complex sentences using sentence combining procedures				SEVERAL TIMES A MONTH				
i. Have students engage in prewriting activities (e.g. reading and completing a graphic organizer) to help them gather and organize possible writing ideas				SEVERAL TIMES A MONTH				
j. Have students engage in inquiry/research activities that result in a writing product, where they gather, organize, and analyze information they collect				SEVERAL TIMES A MONTH				
k. Use a process approach to writing instruction in my classroom				SEVERAL TIMES A MONTH				
l. Have students study and emulate/imitate models of good writing				SEVERAL TIMES A MONTH				
m. Have students use writing as a tool for subject-matter learning				SEVERAL TIMES A MONTH				
n. Have students use self-monitoring strategies to monitor their writing performance and writing goals (e.g. rubrics or checklists)				SEVERAL TIMES A MONTH				
o. Provide students verbal praise and positive reinforcement when they write				SEVERAL TIMES A MONTH				
p. Use direct instruction methods (modeling, guided practice, and review) in my classroom				SEVERAL TIMES A MONTH				
q. Teach grammar				SEVERAL TIMES A MONTH				

If you do other kinds of writing activities, write each below and then circle how often you do them (using the same scale as above):

_____	NEVER	SEVERAL TIMES A YEAR	MONTHLY	SEVERAL TIMES A MONTH	WEEKLY	SEVERAL TIMES A WEEK	DAILY	SEVERAL TIMES A DAY
_____	NEVER	SEVERAL TIMES A YEAR	MONTHLY	SEVERAL TIMES A MONTH	WEEKLY	SEVERAL TIMES A WEEK	DAILY	SEVERAL TIMES A DAY
_____	NEVER	SEVERAL TIMES A YEAR	MONTHLY	SEVERAL TIMES A MONTH	WEEKLY	SEVERAL TIMES A WEEK	DAILY	SEVERAL TIMES A DAY

Part IV: Writing Adaptations

12. The following lists a variety of adaptations you may use with students who are struggling with writing in your content-area classes. A writing adaptation means that you tailor your teaching to meet the needs of individual students who struggle with writing *beyond* what you do with other students in your class. Please circle how often you do the following writing adaptations for struggling writers in your classes during a school year. This should be beyond what you do with the other students in your class. A completed item is shown below. This item shows that the respondent "reduces length of assignments" for struggling writers 1 to 2 times a month, beyond what is done with other students in his or her classes.

EXAMPLE:

Reduce length of assignment	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
a. Conference with student about his/her writing	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
b. Have students conference with each other about their writing	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
c. Have student select his/her own writing topics	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
d. Have student share his/her writing with their peers	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
e. Have student publish his/her writing	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
f. Have stronger writer help a struggling writer with writing	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
g. Have student complete writing at his/her own pace (e.g. extend time for assignment completion)	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
h. Teach sentence construction skills	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
i. Teach student ways of organizing text (or how text is organized)	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
j. Teach handwriting skills	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
k. Teach grammar skills	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
l. Teach punctuation/capitalization skills	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
m. Re-teach writing skills or strategies that I previously taught	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
n. Have student use graphic organizer when writing	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
o. Have student write about what they read	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY
p. Teach the written genres relevant to my discipline	NEVER	1-2 TIMES YEARLY	1-2 TIMES MONTHLY	1-2 TIMES WEEKLY	DAILY

(Appendix continues)

Part V: Writing and Assessment

13. Please check ✓ all that apply.

a. In what ways do you use writing to evaluate your students' knowledge in your content-area classrooms?

- Have students write short answer questions on test
- Have students write essay exams
- Have students create portfolio of class work
- Have students write a summary of what they have read
- Administer standardized norm-referenced tests
- Other: _____

b. How do you evaluate students' written products?

- Use rubrics/holistic scales
- Use professional judgment
- Other: _____

Part VI: Attitudes About Writing

14. Please circle the degree to which you agree or disagree with each statement below. A completed example item is presented below. This item shows that the respondent moderately agrees that "writing should be taught across the curriculum."

EXAMPLE:

Writing is taught across the curriculum	STRONGLY AGREE	<u>MODERATELY AGREE</u>	AGREE SLIGHTLY	DISAGREE SLIGHTLY	MODERATELY DISAGREE	STRONGLY DISAGREE
a. I received adequate preparation in my teacher education program to teach writing in my content-area	STRONGLY AGREE	MODERATELY AGREE	AGREE SLIGHTLY	DISAGREE SLIGHTLY	MODERATELY DISAGREE	STRONGLY DISAGREE
b. I have received adequate inservice training to teach writing in my content-area	STRONGLY AGREE	MODERATELY AGREE	AGREE SLIGHTLY	DISAGREE SLIGHTLY	MODERATELY DISAGREE	STRONGLY DISAGREE
c. My students have the writing skills they need to do work in my class	STRONGLY AGREE	MODERATELY AGREE	AGREE SLIGHTLY	DISAGREE SLIGHTLY	MODERATELY DISAGREE	STRONGLY DISAGREE
d. Writing is an essential skill for students after high school	STRONGLY AGREE	MODERATELY AGREE	AGREE SLIGHTLY	DISAGREE SLIGHTLY	MODERATELY DISAGREE	STRONGLY DISAGREE
e. Students are taught the writing skills in high school needed to be successful in the workplace	STRONGLY AGREE	MODERATELY AGREE	AGREE SLIGHTLY	DISAGREE SLIGHTLY	MODERATELY DISAGREE	STRONGLY DISAGREE
f. Students are taught the writing skills in high school needed to be successful in college	STRONGLY AGREE	MODERATELY AGREE	AGREE SLIGHTLY	DISAGREE SLIGHTLY	MODERATELY DISAGREE	STRONGLY DISAGREE

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