Writing and Content Area Learning
AGNIESZKA MAZUR AND SARAH WARSHAUER FREEDMAN

Introduction

Writing commonly helps students achieve disparate goals connected to school learning not just in English class but in all the disciplines. Writing functions to help us remember, imagine something new, communicate, and display what we have learned or what we think. Griffin and Cole (1984) point out that from the inception of literacy in the form of tokens in the Middle East, “writing and reading were embedded in activities which had a complex higher level goal” (p. 70). And so it is that writing is a tool that can help students achieve complex, higher-level goals in school settings too. School-related writing can take the form of notes on class discussions, copying of homework assignments, student journals for reflecting on reading, e-mail to friends and other social networking related to academic issues, marginal notes commenting on a piece of reading, laboratory notes, examinations, formal course papers, and so on. And each type of writing, in some way, has the potential to contribute to the most central goal of schooling: a student’s learning. As Shanahan (2004) explains in his review of research on writing to learn, “there have been so many studies showing that writing improves learning that it appears to be a closed question” (p. 61).

Traditionally, writing has been framed as a general set of language skills that language arts teachers and English instructors have had the responsibility of teaching. However, both writing and thinking seem to be shaped by discipline-specific discourse conventions and discipline-specific constructs of what counts as knowledge (Bazerman, 1984, 1988). Thus, instead of defining writing as a generic set of transferable skills, writing appears to be a particularly useful tool for learning in kindergarten to 12th grade (K-12) and postsecondary settings when used across subject areas.

In K-12 settings writing-to-learn approaches, such as informal journal writing, have been shown to help students learn concepts, delve deeply into subject matter, and reflect on their learning (Langer & Applebee, 1987; Johnson, Jones, Thornton, Langrall, & Rouse, 1998; Prain & Hand, 1999; Freedman, Delp, & Crawford, 2005). However, more research is needed on the difficulties and possibilities of understanding how English learners (ELs) in K-12 settings use writing-to-learn as they grow as writers and thinkers.

In postsecondary settings, however, the focus of research shifts to what is involved in mastering disciplinary genres, to learning-to-write in the disciplines. Studies include how students learn to construct and display knowledge, use specific discourse structures, and respond to audience expectations for particular types of writing. For instance, central concern of research on disciplinary writing in university settings is how students learn the favored conventions and modes of expressions of disciplinary discourse communities (Herrington, 1985; Swales, 1990; Beaufort, 2007). There is robust postsecondary research on ELs that highlights what is involved in learning these skills. After examining what we know about both writing-to-learn, with its K-12 focus, and learning-to-write, with its postsecondary focus, we conclude by discussing concerns about and recommendations for improving the quality and effectiveness of content area writing.
Writing and Content Area Learning in K-12 Settings:  
A Focus on Writing-to-Learn

Native English Speakers

At the primary level, research shows that even native English speaker (NES) first graders increase agility with both scientific concepts and the conventions of science writing through family message journals. When first graders wrote daily to their families about what they learned during classroom science lessons and activities, they demonstrated growth over time in their ability to think and to express themselves in ways favored in science (Wollman-Bonilla, 1998). Similarly, when fifth graders used journal writing to describe their thinking and reasoning before completing probability problems, they showed increased ability to solve problems correctly and greater facility in describing the process they used in solving these problems (Johnson et al., 1998).

At the secondary level, any sort of writing activity, including note taking and short-answer questions as well as extended writing, has been found to lead to more learning than reading and studying alone. In a study of 18 science and social studies classrooms, “different kinds of writing activities led students to focus on different kinds of information, to think about that information in different ways, and in turn to take quantitatively and qualitatively different kinds of knowledge away from their writing experiences” (Langer & Applebee, 1987, p. 135). Extended analytical writing led students to focus a few ideas in complex ways, which allowed them to remember the topics they explored for a longer period of time than if they completed short-answer study questions. Conversely, short-answer study questions allowed them to recall more information, but only for the short term. In another study, writing in a biology classroom led to a variety of different learning and thinking functions depending on the occasion and on the ways that individual students employed writing (Prain & Hand, 1999).

High school students demonstrated greater understanding of biological concepts when they translated these concepts into simple language. When they wrote about these concepts to third-/fourth-grade students, they learned more than when they wrote to their teacher, parents, or peers (Gunlock, Hand, & McDermott, 2009). The act of translating complex concepts into everyday, simple language seemed to push students toward this deeper understanding of subject matter.

In an eighth-grade English literature classroom, culturally and linguistically diverse students deepened their understanding of subject matter by incorporating each other’s voices and ideas during classroom writing practices (Freedman et al., 2005). By reading and responding to each other’s log writing about the ideas they encountered in their reading and discussion, students were able to incorporate the ideas of their peers in ways that transformed their own ideas and thereby deepened and expanded their understanding of the texts they studied. Students also gathered ideas from each other by writing down contributions made during whole-class discussion. This writing was structured so that students could organize their notes as ideas developed over the course of a literature unit. Similarly, in a comparative study of three social science classrooms, high school students engaged with history content particularly when discussion and writing were interrelated and when students were taught to incorporate each other’s voices in their writing (Dysthe, 1996).

As is the focus of most research at the postsecondary level, a study of more advanced writing classes in high school—advanced placement history classes, equivalent to university-level classes—turned to examine learning-to-write in ways that helped students develop disciplinary discourse knowledge; the students were writing-to-learn by learning-to-write.
(Young & Leinhardt, 1998). When students wrote from primary sources, they grew in their content knowledge through understanding history from multiple perspectives rather than seeing it as a series of unquestionable “facts.” Concurrently, students developed greater ability to make arguments and include interpretations in their writing about the past instead of simply summarizing what they read.

English Learners

In US public school settings, understanding the connection between writing and content area learning for EL-designated students is complicated by the tendency, especially at the secondary level, for schools to isolate multilingual students in EL tracks where they are exposed to little writing or learning of any sort (Valdés, 2001; Callahan, 2005). While psycholinguistic research suggests that multilingual students may have greater cognitive and linguistic flexibility than students who know only one language (Romaine, 1989; Bialystok, 2001), multilingualism generally has been treated as a deficit to be overcome in public schools.

However, studies of ELs in elementary school classrooms designed to facilitate bilingual Spanish–English students’ learning and literacy development provide a model of an environment where “children learned to use their bilingualism deliberately, consciously, to access and manipulate resources for intellectual and academic purposes” (Moll, Saez, & Dworin, 2001, p. 444). For example, one child read English texts on which she took notes in Spanish and then wrote a report on Sioux Native Americans in Spanish from these notes. She was thus able to use the many tools in her linguistic and cultural toolkit to engage in writing and learning activities. Additional studies are needed to help us better understand how ELs learn to write across the disciplines as well as how writing in their multiple languages might function to help them acquire disciplinary knowledge.

Writing and Content Area Learning in Postsecondary Settings: A Focus on Learning-to-Write

Native English Speakers

Much like their counterparts at the secondary level who focus on the transition to university for advanced placement students, most postsecondary research with NES populations focuses primarily on how students learn to write in the disciplines. Researchers are interested, however, in the relationship between acquiring the disciplinary writing conventions and learning the material of the discipline itself. In the end, the main focus at the postsecondary level, on learning-to-write, is centrally concerned with how learning-to-write in disciplinary courses teaches students ways of thinking and doing in those disciplines.

Charles Bazerman’s (1984, 1988) rhetorical analyses across the disciplines have been particularly influential in providing a foundation for studying learning to write in the disciplines. Bazerman has examined the character and role of prominent articles in various disciplines, including biochemistry, sociology, and literary studies. He found that each discipline constructs its own specific understanding of audience, of authorial role, and of what counts as knowledge. Reflecting this emphasis on the specialized discourses of disciplines and professions is the name “writing in disciplines” (WID), which is widely applied to pedagogical approaches that focus on the unique language conventions, format, and structure for writing in particular disciplines. Indeed, “WID believes that to participate successfully in the academic discourse of their community, students must be taught discipline-specific conventions and should practice using these conventions” (Wells, 2010).
Learning the conventions for writing in a discipline does appear to help students participate in academic discourse communities (Herrington, 1985; Beaufort, 2007; Carter, Ferzli, & Wiebe, 2007). For instance, 10 undergraduate biology students were “apprenticed” into science writing and thinking through writing lab reports. These reports helped students make connections between lecture material and the experiments they performed in the lab and to communicate those connections in ways valued in the biological sciences (Carter et al., 2007).

However, because discourse communities are not explicitly discussed in college courses, students may have difficulty in understanding how and why ways of thinking and writing vary so much between disciplines and to a lesser degree between different courses in the same discipline. For instance, an undergraduate student struggled to write and think according to the requirements of two different discourse communities: history and engineering. Only after graduating and working as an engineer was he able to understand fully the functions of writing engineering reports and to master the genre for his purposes (Beaufort, 2007). Moreover, two college chemical engineering classes represented distinct communities where different issues were addressed, different lines of reasoning used, different writer and audience roles assumed, and different social purposes served by writing (Herrington, 1985). In college settings, the discourse community of the classroom may be removed from the professional discourse community, or even from that of other courses in the same discipline, making it difficult for students to understand the demands of the discipline.

A few postsecondary researchers have attended primarily to writing-to-learn. They have found that writing-to-learn through journaling and informal writing helps students find meaning in and personal connections to the material they encounter in their coursework, and also helps them work through ideas and professional identities (Geisler, 1994; Herrington & Curtis, 2000; Medway, 2002). The personal connections motivated students to pursue areas of study in ways that led to a greater understanding of themselves as thinkers and actors within a particular discipline or future profession. For instance, architecture students used writing to elaborate drawings in their sketchbooks; they used this informal and expressive writing to help them explore how to look at the world as an architect and to rehearse “both content and the rhetoric” of the discipline (Medway, 2002, p. 111).

However, some have questioned the effectiveness of some types of writing-to-learn pedagogical approaches. For instance, on the final exam in an undergraduate Chinese literature course, students who kept academic journals, as well as those who did not keep journals at all, outperformed students who kept personal response journals. The students using personal response journals seemed unable to perceive the issues that were pertinent to their professor and thus did not focus on what would have prepared them for the essay exam. Instead, they followed lines of inquiry that did not match the demands of the test (MacDonald & Cooper, 1992). Journaling in postsecondary settings has been found to be most effective when students and instructors shared an understanding of the specific purpose that the assigned writing served and when assessments aligned with the types of writing that students used throughout the course (Cannon, 1989; Hartman, 1989; Cowles, Strickland, & Rogers, 2001). In vocational courses in 10 colleges across the United Kingdom, students struggled to understand the meaning and purpose of reflective writing in which they were to report and reflect on what they were learning in workplace or practical training settings (Ivanic et al., 2009). According to the researchers, “‘Learning logs’ of various sorts have . . . become popular under the auspices of student-centered learning, but the genre of reflective writing for this purpose is not taught, and indeed seems to be thought of as a ‘natural’ form of self-expression. This is something students struggled with” (p. 184).
Adding English Learners to the Mix

Research and pedagogy in postsecondary, second language (L2) writing generally shares the writing-to-learn perspective. For instance, English for specific purposes (ESP) researchers have been especially interested in examining the linguistic and rhetorical purposes and audiences in fields such as business, engineering, and science in order to facilitate learning in these areas (Swales, 1990; Bhatia, 1993). Research on both first language (L1) and L2 writing has also focused on the concept of discourse communities, which L2 researcher John Swales (1990) defines as learning to be a member in a community of writers who write in specific ways for specific purposes. As Swales puts it, “Discourse communities are sociorhetorical networks that form in order to work towards sets of common goals. One of the characteristics that established members of these discourse communities possess is familiarity with the particular genres that are used in the communicative furtherance of these goals” (p. 9). Therefore, through learning how to use and manipulate disciplinary genres, students learn to act according to shared goals and understandings within a disciplinary discourse community. In studies of L2 writing, researchers have closely examined linguistic moves that students need to be able to use in their writing in order to participate effectively in the disciplinary discourse communities (Flowerdew, 1993).

Thus, writing socializes both L1 and L2 students into discipline-specific discourse communities, which have preferred ways of acting rhetorically, including using linguistic conventions to achieve specific goals. For example, L1 and L2 second-year graduate students in the biological sciences were apprenticed to the discourse community of National Institutes of Health grant writing. In their grant writing seminar, students were taught how to write stylistically and rhetorically effective grants and were made familiar with the process by which grants are evaluated (Ding, 2008). Moreover, through writing lab notes in informal settings, such as in laboratories and through writing in collaboration with experts and colleagues, students acquired disciplinary knowledge and expertise. Those who wrote the most sophisticated grants integrated both stylistic and disciplinary knowledge. Thus, “the usual separation between the rhetorical and stylistic aspect of writing and the scientific merit of the actual written product is artificial, unproductive, and counterintuitive to students” (Ding, 2008, p. 47).

National Concerns About Writing in US Schools

In recent years, there has been growing concern that writing in K-12 classrooms has become an ever-lower priority. This concern is especially acute for public schools that serve economically and linguistically nondominant students, including EL-designated students and those who speak African American Vernacular English (AAVE), since students in such schools have tended to perform poorly on standardized assessments. Faced with impending sanctions, the schools have been pressuring teachers to “teach to the test.” Because writing generally is not featured in high-stakes assessments, it has not been a central concern.

According to the report of the National Commission on Writing for America’s Families, Schools, and Colleges (2003), “the valuable tool of writing must be put back in the hands of schoolteachers ... because writing (and all the conceptual skills it reflects and develops) opens up new and powerful means of learning for all students” (p. 16). The Commission argues that the need for reform is critical since many students are rarely writing-to-learn or learning-to-write. Moreover, the Commission stresses that the needs of students identified as EL must be a central concern of writing reform efforts since EL students are one of the fastest growing populations in US schools.
When students do write, they tend to perform at a basic level, which “demonstrates only a limited grasp of the importance of extended or complex thought” (National Commission on Writing, 2003, p. 55). For instance, the non-high-stakes National Assessment of Educational Progress, which does include a writing assessment, revealed that students today have a “basic” grasp of writing, but what they are producing is “relatively immature and unsophisticated” (p. 55). Even though the writing assessment does not test how students use writing as a tool either for learning or for participating in disciplinary discourse communities, it does show that students are struggling with clearly expressing complex ideas and arguments. The Commission concludes that students’ performance falls far short of what they will need to succeed in our complex social and economic environment, in which the “demands for clear written communication are apparent in many arenas . . . including in technical fields of work such as engineering, which increasingly emphasize written materials such as proposals and interim and final reports” (National Commission on Writing, 2003, p. 49). In response to this problem, a central recommendation is to increase writing across the curriculum (WAC) pedagogy for all students. This instructional approach emphasizes the widespread use of writing as a tool for learning in K-12 and postsecondary settings across subject areas, from the humanities to mathematics and science.

**Conclusion**

Students use writing to achieve learning goals in various ways, depending on the learning context and activity in which they participate as they write. Research on writing and content area learning in K-12 settings focuses mostly on writing-to-learn pedagogical approaches for NESs. Findings show that there are many ways in which writing can lead to learning, from supporting students in understanding content material, to helping them explore and create ideas and identities. Different types of writing promote different types of learning. In K-12 settings most research focuses on NESs; more research is needed about ELs and how they might best use their multiple language resources in the service of their learning.

In postsecondary settings the research and perhaps even the pedagogic focus shift to learning-to-write for both NES and EL students. Findings show that writing is not a neutral tool, and that acquiring disciplinary writing conventions is interrelated with learning the material of the discipline itself. For instance, different types of writing differently construct what counts as knowledge, require specific discourse conventions, and carry particular audience expectations. This understanding is reflected in research in postsecondary settings to a greater degree than in K-12 studies, perhaps mirroring the increased demands on postsecondary students to become apprenticed in disciplinary discourse communities.

In practice and conceptually, a great deal of overlap exists between writing-to-learn and learning-to-write. A thoughtful integration of writing-to-learn and learning-to-write for all ages seems to hold promise for improving the teaching and learning of writing across content areas and grade levels, with attention to how different types of writing lead to different types of learning. We need to understand more about the complex relationships between writing-to-learn and learning-to-write and the processes that overlap and diverge for NES and EL students.

**SEE ALSO:** English for Academic Purposes; Genre-Based Language Teaching; Teaching Writing; Writing and Genre Studies; Writing and Language for Specific Purposes
References


**Suggested Readings**


