Teaching the Conventions of Academic Discourse

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A study of scholarly research articles from six disciplines provides insights about academic writing that composition instructors can use to prepare students to write across the curriculum.

iven the current emphasis on disciplinary discourses, it's not surprising that So little recent attention has been devoted to identifying conventions that are universal in academic discourse. In this essay, I argue that there are shared features that unite academic writing, and that by introducing these features to first-year students we provide them with knowledge they can apply and refine in each new discipline they encounter.

Some scholars believe that making generalizations about academic writing is impossible. Just as there is "no autonomous, generalizable skill called ball using or ball handling that can be learned and then applied to all ball games," David Russell argues, there is no "autonomous, generalizable skill or set of skills called 'writing' that can be learned and then applied to all genres or activities" (57, 59). Because there are no "general" skills that students can learn and transfer to all writing situations, some suggest that students would benefit more from learning about the ways writing conventions vary across academic disciplines and discourse communities (Wardle 784).

Others (such as Berkenkotter and Huckin; Freedman) believe that writing conventions can't be taught and that trying to teach them "assumes that one can learn to write academic genres by adhering to a definite rule-set" (Lynch-Biniek). But linguistic scholars (including Swales; MacDonald; Bazerman; Biber) have demonstrated that patterns and formulas prevail in academic writing, and many have described the benefits of teaching writing conventions to students (see, for example, Williams and Colomb). By teaching conventional ways to introduce topics, identify sources, and organize arguments, for instance, we provide "a valuable tool for clarifying academic mysteries to large numbers of students" (Birkenstein and Graff). In fact, Wilder and Wolfe found that students who were explicitly taught language conventions in a literature course wrote better essays and reported comparable or higher levels of enjoyment in the course than those receiving no instruction in writing conventions (170).

As Hassel and Giordano noted in a recent *TETYC* article, the need for explicit instruction in writing conventions is particularly acute at open-admission two-year colleges, where many students, including those testing into college-level writing courses, are unfamiliar with rhetorical strategies expected in college writing (25). Even freshmen at universities, when asked to write college papers, can feel like they are being asked "to build a house without any tools" (Sommers and Saltz 131).

Studies by Carroll, Herrington and Curtis, and McCarthy reveal considerable variety in the writing undergraduates do and in the disciplinary approaches they encounter. Disciplines differ in modes of inquiry, in forms of proof, and in methods of research. These differences manifest themselves in writing, as documented in corpus-based studies by Swales, MacDonald, Hyland, and others, differences students will appreciate when they learn to write the genres of their chosen majors.

Despite this variation, some principles appear in all academic writing guides, no matter the discipline, as Karen Bennett found in her survey of forty-one style manuals. Some shared features, such as source citation, are, of course, realized differently across disciplines; but Bennett found "remarkable consensus as regards general principles, methods of textual construction, and the kinds of grammatical and lexical features to be used" (43). No first-year student is expected to write like discipline insiders when writing in entry-level courses that are "predisciplinary in both theory and practice" (Diller and Oates 54). But research indicates students are rewarded when they produce prose that resembles that of experienced academic writers.

To determine what rhetorical features appear in the prose of experienced academic writers, I analyzed twenty-four research articles—four articles from each of six disciplines: psychology, sports medicine, biology, marketing, literature, and engineering. The articles were randomly selected from the following peer-reviewed journals:

American Journal of Community Psychology
American Journal of Sports Medicine
Journal of Cell Biology
Journal of Marketing Research
PMLA (Publications of the Modern Language Association of America)
Proceedings of the Institution of Mechanical Engineers

My analysis reveals six standard "moves" in academic writing:

- > Writers respond to what others have said about their topic.
- > Writers state the value of their work and announce the plan for their papers.
- > Writers acknowledge that others might disagree with the position they've taken.
- > Writers adopt a voice of authority.
- > Writers use academic and discipline-specific vocabulary.
- > Writers emphasize evidence, often in tables, graphs, and images.

Introducing first-year composition students to these conventions of academic writing provides them with knowledge they can use now and refine later when writing in their chosen disciplines.

Let's start with the standard way academic writers begin—by summarizing what others have said about their topic.

I. Academic Writers Respond to What Others Have Written about **Their Topic**

When academics write, they join a conversation. To show they understand this they refer to what others have already written about their subject. This feature appears in every article of the sample. Consider this passage from a report in the sports medicine sample articles:

In the past decades, major insights have been gained into how intrinsic factors and extrinsic signals control and guide the development of dendrites and dendritic spines and how patterned neural activity shapes this process (Hering and Sheng, 2001; ... Van Aelst and Cline, 2004). Nonetheless, large gaps still exist in our knowledge about how all these pathways integrate and execute their function at the molecular level. (Huang, Zang, and Reichardt 527)

By referring to what others have said about a topic, writers accomplish two things: they show that they are addressing an issue that matters, and they establish that there is more to be said about it.

Sometimes writers enter the conversation by taking issue with the conclusions of previous researchers, as in this passage from the literature articles:

[Christopher] Lane's thesis, linking ambivalent national-symbolic identifications on the part of homosexual writers to specifically colonial rhetorical structures, is convincing (3); however, I would position Auden's case differently, as paradoxical to this founding paradox of colonial passion. (Christie 1576)

Others have noted that disciplines vary in the way disagreement gets expressed. Linton, Madigan, and Johnson found that in literary criticism, for example, attacks can get personal, unlike in other disciplines where disagreements are ignored or limited to criticizing research methods (73–74). But the writers in my sample, including those representing literature, show respect for previous research. Undergraduates, given their junior status, would be wise to follow suit when disagreeing with published scholars.

Like published scholars, undergraduates write research-based papers, today more than ever (Lunsford and Lunsford 793). But they struggle in two notable ways, First, many students fail to contribute to the conversation. Instead of analyzing, synthesizing, or adding to what others have said, they merely show they have "done the reading." Second, in student papers, incorrect or missing source citations abound. Tinberg and Nadeau's recent study of first-year students at a community college reminds us that for students the most in-depth discussion and practice of writing occurs in their required writing course (128). One way we can prepare students for writing across the curriculum is with assignments that involve summarizing, synthesizing, attributing writers, and commenting on what they have said.

2. Academic Writers State the Value of Their Work and Announce the **Plan for Their Papers**

One reason academics refer to what has been written about an issue is to establish that the issue matters. Another reason is to show that their research addresses an aspect of the issue still unresolved. All twenty-four writers in our sample explain that their research is necessary, unique, or otherwise of value, as in this passage from the marketing articles:

The vast majority of research that has assessed the effect of price promotions on brand evaluation has studied the effect after product trial, rather than pretrial. . . . Unlike previous studies ..., we examine the effects of price promotions pretrial to isolate their informational impact on brand quality perceptions from the potentially moderating effect of prior personal experience with the brand. (Raghubir and Corfman 212)

Scholars must sell their work to editors and reviewers; but students too must "sell" their work to their professors. By explaining why their topic is important, how their approach to a topic is unique, or even why they chose to write about a topic, students set their papers apart from papers that lack purpose.

In addition to stating the value of their work early, academic writers help readers navigate their texts. All twenty-four titles in our sample announce the specific topic of the article; a few (particularly in the sciences) also convey the research results. Here is an example from the psychology articles:

Conceptualizing and Measuring Historical Trauma among American Indian People

From the biology articles:

Process Outgrowth in Oligodendrocytes is Mediated by CNP, a Novel Microtubule Assembly Myelin Protein

Twenty-three of twenty-four articles also include subheadings that announce the topic of sections:

Effects of Multiple Ankle Sprains on Postural Sway Matters of Conscience in Machiavelli and Macbeth

Another way academic writers prepare readers for what is ahead is with an explicit statement of purpose. Here is an example from the engineering articles:

This paper describes the development of a second generation of piezoelectric paint and the characterization of sensors made with it. (Hale et al. 1)

In some articles, writers announce their hypothesis:

We hypothesized that there would be an increase in ankle repositioning errors and postural sway in basketball players who had sustained bilateral ankle sprains, under conditions in which they had to rely more heavily on ankle proprioceptive input. (Fu and Hui-Chan 1175)

In other articles, the statement of purpose expresses the writer's opinion:

I ... precede my discussion of the trope of the castrato with a brief historical overview of the situation and reception of actual castrati singers. I then show how Johann Jakob Wilhelm Heinse (1746–1803) and Friedrich Schiller (1759–1805) used the figure of the castrato as a privileged metaphor for the negotiation of class conflicts, gender concepts, and the nature of art. (Krimmer 1544)

Many students think the main claim in an academic argument must be an assertive, polemic statement. But corpus-based analyses reveal that most academic writers state their main claim matter-of-factly (Conrad 119-20). Statements that begin with "This paper describes," "We hypothesized," and "I then show" (from the above examples) are not argumentative; they hardly seem like opinions.

Most writers in our sample identify the paper's organization along with the purpose. Here is an example from the psychology articles:

First, we will provide an overview of previous work conceptualizing historical psychological distress among American Indians. Second, we will present a summary of qualitative data from elders on two American Indian reservations in the upper Midwest that was used to develop a measure of historical trauma. Third, we will describe measures of historical trauma and provide measurement characteristics and frequencies on the basis of a sample of 143 parents. (Whitbeck et al. 120)

From the marketing articles:

The article is organized into four sections . . . that systematically investigate the effect of package shape on volume perceptions, preference and choice, consumption (perceived and actual), and postconsumption satisfaction. (Raghubir and Krishna 314)

Some composition instructors want students to avoid statements of purpose that begin "In this paper" and to avoid "blueprint" statements that announce topics. But such statements are commonplace in academic journals, and many professors reward students who make reading easy. In their analysis of 50 graded essays (from various disciplines), Tedick and Mathison noticed "the general pattern was that subjects received higher holistic scores on the essays—regardless of prompt type that they framed well enough for readers to be able to make predictions about the content to come" (206).

In addition to providing subheadings and overviews, many writers in the sample stop within their articles to announce what is next, as in this example from the marketing articles:

In the next section, we discuss relevant research on visual mental imagery in the design, marketing, and psychology literature, present a conceptual model of how visual mental imagery influences the customer appeal of the product designed, and propose a set of hypotheses. (Dahl, Chattopadhyay, and Gorn 19)

Most writers end by summarizing what has been covered and reiterating the value of their research, as shown in this example from sports medicine:

To our knowledge, this study provides the longest follow-up in the literature of patients undergoing meniscal repair with the arrow. . . . Indeed, this study represents the longest follow-up in the literature on any of the available all-inside meniscal repair devices. (Lee and Diduch 1140-41)

Every article in the sample includes a statement of purpose, preview sentences, review sentences, and sentences that announce the value of the research. Student research and writing may not be as complicated as that of the scholars in our sample, but students write for professors who read many papers—quickly. A wealth of research has shown that when writers signal where they are going and how they will get there, readers read faster and remember better what they have read (Meyer 212–16). This is an important principle for students to learn.

3. Academic Writers Acknowledge That Others Might Disagree with the Position They've Taken

Because scholars recognize that others might disagree with their conclusions, they sprinkle their writing with qualifiers, or hedges, such as "probably," "possibly," "maybe," and "it seems," particularly when writing to colleagues. Writers use hedges to make statements more accurate and to avoid appearing dogmatic. Examples of hedges are italicized in the following sentences from our sample. First from the sports medicine articles:

The onset latency to the ADM was not affected, whereas the onset latency to the FDI was affected, suggesting, the lesion may be located in the palm, distal to the motor branch to the ADM. (Akuthota et al. 1228)

From the psychology articles:

[Oppressed people] tend to be passive and unable to recognize their own capacity to transform their social reality; and their existence is often accepted on the basis of destiny, bad luck or supernatural will. (Balcazar, Garate-Serafini, and Keys 250)

Writers in the sample also anticipate potential critics by recognizing the limitations of their findings:

More research, varying the factors previously identified, is necessary to establish the generalizability of our findings to a broader range of product design contexts. (Dahl, Chattopadhyay, and Gorn 27)

Professors sometimes complain that students fail to back their claims with sufficient evidence. While this is sometimes true, the problem can be partly due to students' failure to qualify assertions. Some students, especially those who are not native speakers of English, underuse qualifiers (e.g., "apparently," "likely," "possibly")

and overuse words expressing certainty (e.g., "really," "of course," "certainly") in their writing (Gilquin and Paquot 47).

By teaching students how to distinguish between statements of "fact" and opinion, how to differentiate between generalities and specifics, and how and when to moderate claims with hedges, we help them write better arguments in any discipline. Students readily see the difference between "Surveys prove Americans are changing their attitudes about same-sex marriages" and "Surveys suggest Americans may be changing their attitudes about same-sex marriage," and with practice they learn to moderate sweeping generalities.

4. Academic Writers Adopt a Voice of Authority

Although tentative in their claims, academic writers still write with authority. Conveying authority is understandably challenging for student writers. David Bartholomae describes their dilemma: Students "have to speak in the voice and through the codes of those of us with power and wisdom; and they not only have to do this, they have to do it before they know what they are doing . . . and before, at least in the terms of our disciplines, they have anything to say" (156). Even graduate students have difficulty establishing an ethos of authority when writing as initiates in their field (Blakeslee 133). But students can learn to imitate techniques of experienced writers.

Using First or Third Person

Writers in a few disciplines, such as engineering, tend to avoid first person in formal writing. A look at two passages from our sample, the first from marketing, the second from engineering, is revealing:

In this article, we examine the effect of elongation on (1) perceived volume, (2) perceived consumption, (3) actual consumption, (4) postconsumption satisfaction, and (5) choice. As described in Figure 1, our model suggests that package shape directly affects perceived volume and through this, indirectly and inversely affects perceived consumption. (Raghubir and Krishna 323)

This paper presents a new approach to model the friction layer in brake systems in the investigation of noise and vibration, especially high-frequency squeal. . . . The friction layer is modeled as a coupling stiffness between the brake pad and the rotor as a combination of the elastic stiffness of the friction layer superimposed on the coupling modal stiffness of the brake-pad combination. . . . By incorporating the earlier results in a two degree of freedom model, the predicted frequencies were shown to be close to the squeal frequencies obtained from field tests. (Paliwal et al. 520-21)

The engineering paragraph includes no mention of who completed the research ("predicted frequencies were shown"). In fact, the paragraph is from a journal that advises authors: "Papers should be written in the third person in an objective, formal and impersonal style."

But in the rest of the sample, nineteen of twenty writers use first person. Writers in medicine, marketing, psychology, biology, and literature all make clear that they formed hypotheses, collected data, and reached conclusions. From the sports medicine articles:

We compared the results obtained from the injured ankle with those from the uninjured ankle. (Santilli et al. 1186)

From the psychology articles:

My colleagues and I interviewed 28 adult Bosnians attending a community mental health program. (Miller 225)

Compared to the engineers, these writers also use more active voice constructions—another way to convey authority. For engineers, the average number of occurrences of passive voice within 500-word excerpts is nearly twice the average for any other discipline in the sample (15.8 occurrences in engineering versus 8.8 occurrences in sports medicine, 4.3 in psychology, 6.0 in marketing, 7.0 in cell biology, and 3.25 in literature).

The challenge for student writers is knowing how and when to use first person. Many students needlessly preface statements with "It seems to me" or "I think" (Gilquin and Paquot 48–49, 55–57). Others, attempting to convey authority, adopt the voice of moralizing parent. With direction, however, students improve. They can learn to judge when writing "I think" has purpose and when writing "I think" is pointless. (McKinney Maddalena provides excellent help for students concerning when to use first person.)

Writing Concisely

Another way writers create an ethos of authority is by using a high percentage of meaning-carrying words. In the 1970s, Jean Ure developed a method for determining a text's lexical density by calculating the percentage of lexical words (445). Lexical words include nouns, verbs, adjectives, and adverbs—classes of words that convey meaning and to which we continue to add. Grammatical words include pronouns, auxiliary verbs, conjunctions, prepositions, articles, and other determiners—classes of words to which we don't add. Thus, the following sentence includes seven lexical words (in bold print):

Some scientists believe that stem cells can be used to treat diseases.

While spoken language includes many grammatical words (Ure found the percentage of lexical words in spoken language to be below 40 percent), written texts tend to be more lexically dense. In Ure's study (in 1971), the lexical density of a textbook was 50.2 percent, and the lexical density of a scholarly journal was 52.8 percent (cited in Ventola 159). The lexical density in our sample ranges between 52.8 percent (in sports medicine) and 56.5 percent (in cell biology). In other words, more words than not are *meaning-carrying* words.

Writers in our sample pack meaning into sentences:

They don't describe "meniscal healing that was incomplete" but instead write "incomplete meniscal healing."

Not "sociologists and geographers who are feminists" but "feminist sociologists and geographers."

Not "an outdoor site that is exposed" but "exposed outdoor site."

The average lexical density rate of the sample is 54.4 percent, higher than that of most types of writing. When we teach students how to revise for conciseness, we teach them a sure-fire way to improve the quality and authority of their academic writing.

5. Academic Writers Use Academic and Discipline-Specific Vocabulary

One obvious marker of academic writing is academic vocabulary. Several studies of academic writing have focused on familiar sequences of three or more words referred to as "lexical bundles." They include phrases such as the following:

in order to the presence of the fact that in the case of as a result of

Lexical bundles like these account for 20 percent of the words in academic prose (Biber et al. 995), and using these phrases is one indicator of proficiency in academic writing. But Viviana Cortes found that students rarely use them in their writing, and when they do use them it is often not in the way published writers do. She concludes that students would benefit from explicit instruction in lexical bundles and their functions (420-21). For example, when an assignment involves summarizing data from studies, an instructor could show students lexical bundles commonly used to introduce previous research (such as "studies have shown that" and "have been shown to") (Conrad 134). Additional ideas for teaching academic lexical bundles are found in Graff and Birkenstein's book They Say / I Say.

Another marker of academic writing is specialized language. Scientists have long been known for co-opting words and using them in new, specialized ways, as seen in these phrases from our sports medicine and biology articles:

prolongation of the median motor latency preactivation of the lower extremity muscles genomic integrity

But this tendency is not unique to scientists—as additional examples from the sample illustrate. From the engineering articles:

limits of linearity of piezoelectric paint

From the psychology articles:

estimates of construct loadings

From the marketing articles:

expectancy disconfirmation

From the literature articles:

textual and libidinal potentials of coloniality

Technical words like these precisely and concisely convey specialized meanings to others in the field and denote one's membership in any academic community. In fact, Robyn Woodward-Kron has demonstrated that "adopting the specialist language of the discipline is intrinsic to learning disciplinary knowledge" (246).

One way to make students aware of specialist language and lexical bundles is to have them look for recurring terms, stylistic conventions, and other patterns in a corpus of academic writing. There are many free resources for corpus-based research, including the Corpus of Contemporary American English (COCA), with concordancer, available at http://www.americancorpus.org/; and the Michigan Corpus of Upper-Level Student Papers (MICUSP) at http://micusp.elicorpora.info/. (Information about additional corpus research and analysis resources is provided by David Lee at http://tiny.cc/corpora.) Students can use text analysis tools to study the writing of a specific discipline, to learn how the writing styles of disciplines or genres vary, or to analyze their own writing. Corpus-based research assignments also provide students with opportunities to conduct primary research. (See Bowker and Pearson for assignment ideas.)

6. Academic Writers Emphasize Evidence, Often in Tables, Graphs, and Images

Academic writing is ultimately judged on the basis of its evidence, and academic writers use various techniques for highlighting data.

Fourteen (58 percent) of the authors in our sample include tables, graphs, or charts. Given the prominence of data in academic writing, it is important that students learn how to "read" quantitative data. Yet, as Joanna Wolfe recently argued, most first-year students do not understand that writers manipulate "statistical expressions in order to make an interesting story out of their data" (459). She calls on composition instructors to discuss quantitative arguments in their courses:

Our students should be able to quickly discern that the statements "there is a one-in-fifty chance that a bad event will happen" and "there is a 98 percent chance that everything will be okay" differ only in rhetorical choice between two mathematically equivalent figures. And students should have practice making their own arguments from quantitative data, not only so they can see the many ways in which such claims can be manipulated, but also so they can see the role that *invention* plays in statistical data, experimental results, and other quantitative arguments that are often popularly perceived as nonrhetorical "facts." (455, original emphasis)

To illustrate the rhetorical nature of graphs, Wolfe provides four graphical representations of raw data, each lending itself to a different interpretation of the

data (463-64). With examples like those Wolfe offers, we can show students that quantitative data are as much "language" issues as they are "math" issues (462).

Images (including photos and drawings) are also common in the sample. All of the writers representing engineering, sports medicine, and biology use images—to depict experimental subjects, materials, processes, models, and results. Images are more prominent in the writing of some disciplines than others, but their rhetorical power is undeniable.

We process both words and images, Gibson and Zillmann explain, but the "picture-superiority effect of information acquisition" is well documented (357). Gibson and Zillmann had subjects read news stories accompanied with varying images or no images at all. The images influenced subjects more than the words, even when the images weren't discussed in a text. Particularly powerful are images that evoke fear. For example, subjects perceived the risk of getting Blowing Rock disease from ticks to be higher when photos of child victims accompanied the story than when photos of ticks accompanied the same story (364–65).

Many have already argued the merits of teaching visual rhetoric in composition courses and have suggested multimodal assignment ideas. (See, for example, Bickmore and Christiansen's article in a recent issue of TETYC; see also Welch, Lee, and Shuman.) Multimodal assignments are yet another way to prepare students for academic work across the curriculum.

Suggestions and Conclusion

Despite the variety—including among writers within single discourse communities—we can give first-year students useful general knowledge about academic writing. All twenty-four writers in the sample summarize what has been written about their topics, state the purpose of their writing, establish a reasonable vet authoritative tone, use the specialized language of their discipline, and emphasize evidence. When we provide opportunities for practice in these areas in our composition courses, we help students develop skills they will use when writing in other disciplines. A few techniques may facilitate students' understanding of the conventions of academic writing:

- > Have students read authentic academic texts from various disciplines. Most of the reading undergraduates do is from textbooks, newspapers, magazines, and other secondary sources; but authentic academic texts (such as journal articles or laboratory reports) illustrate the conventions of academic writing. Providing accessible academic writing is possible no matter what the focus or pedagogy of a composition course.
- > Help students notice how academic writing varies. Learning how academic writing varies is just as important as learning what it has in common. One way to make students aware of variety is to show them resources for writing in different disciplines. For example, www.dianahacker.com/resdoc/ includes documentation guidelines and sample student papers for humanities, history, social sciences, and sciences. At www.citationmachine.net students can get help creating citations in MLA, APA, Turabian, or Chicago styles. Discussing

- why certain moves (such as attributing sources) are realized in different ways reinforces the importance of audience, purpose, and context. (For discussion of why citation conventions vary see Hyland; also Linton, Madigan, and Johnson.) We can't anticipate all the kinds of writing students will do, but we can prepare them to expect variety.
- > Help students infer and practice academic writing principles—both the universal and the discipline specific. Having students abstract writing principles by studying diverse examples promotes understanding (and thus transfer). Ask students to find patterns, for instance, in how academic authors recognize opposing views or use hedges. Have them analyze passages documented in different styles and infer principles underlying all citation systems. To promote understanding of discipline-specific conventions, have students analyze the genres of their majors using concordance software. (Bowker and Pearson's text includes assignment ideas, many appropriate for first-year writing courses.) Or have students report primary research findings in graphs or in papers with introduction, methods, results, and discussion sections. (For assignment ideas, see Stoller et al.) Exercises like these help students notice commonality and variation in academic writing.
- > Help students see that academic writing is dynamic. Citation systems have adapted to accommodate online sources (changes described by Walker). First person is increasingly common in science writing (a shift explained by McKinney Maddalena). The familiar IMRAD format (introduction, methods, results, and discussion) was rare a century ago. (Sollaci and Pereira discuss this change.) When students realize that language conventions are not fixed "rules," they learn that genres and discourse styles evolve to meet the needs of writers.

Discipline-specific studies have shown us how academic writing varies. But we also need studies that tell us what academic writing has in common. Such studies can help us provide first-year students with knowledge they can use now when writing in predisciplinary courses and build on later when writing the specialized discourse of their chosen fields.

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