

# Describing Cross-Disciplinary Analytic Moves in First-Year College Student Writing

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*College students are often expected to perform a variety of sophisticated intellectual moves in their writing, yet there is little or no evidence that such expectations are reasonable. This study contributes to a growing number of corpus-based studies of student writing through an examination of students' use of four cross-disciplinary analytic moves that research on writing across the curriculum has identified as valued in postsecondary academic discourse in essays written for a required first-year college writing course. Results indicate that few essays in the sample showed evidence of these analytic moves; instead, essays evidenced tendencies to treat serially separate sources with little synthesis and analysis. However, those essays in which cross-disciplinary analytic moves were present received higher grades from writing instructors, suggesting that the value placed on these analytic moves by writing instructors is congruent with the value placed on them in the disciplines. One possible implication of our findings may be that many students entering college are not developmentally ready for such writing tasks and fall back on traditional "research report" strategies that circumvent analysis. However, it may instead be the case that typical first-year writing instruction inadequately prepares students for disciplinary analytic writing tasks and that research is needed to develop new instructional approaches for this purpose.*

## Introduction

Required first-year writing courses are a mainstay of the curriculum at all but a few colleges and universities in the United States. More than two million students enroll in such courses each year.<sup>1</sup> At most postsecondary institutions, a first-year or introductory writing course is the only specific course required of all students, regardless of their majors. This kind of requirement, which has its origins in Harvard University's now-famous "English A" in the 1880s (Connors, 1997), reflects a widespread belief in the importance of writing as essential for learning and as a necessary skill beyond the academy. Yet there seems to be no widely accepted empirical basis for the pedagogical necessity of first-year college writing courses, and scholars disagree about the extent to which students' learning in such courses "transfers" to their writing or learning in other contexts (Bergmann & Zepernick, 2007; Petraglia, 1995; Russell, 1995; Smit, 2004; Wardle, 2007). Moreover, no

scholarly consensus seems to exist about the developmental nature of writing ability, particularly in late adolescence, or about the specific factors that might affect the development of writing ability. Scholars have variously described writing as social, cognitive, and cultural, but efforts to articulate a comprehensive theory that accounts for the development of writing ability have been few and sometimes controversial (e.g., see Flower, 2008, p. 92). Thus, there currently exists no widely accepted empirical or theoretical basis for making claims about the kinds of writing that should be assigned in first-year writing courses or about the expectations for student writing produced in those courses.

At a time when the Common Core movement and related education policy initiatives have led to a greater emphasis on so-called college-ready and workplace writing—and specifically on analytic and argumentative writing—there remains a long-standing uncertainty about what constitutes reasonable expectations for student writing. The standards associated with education reform movements such as the Common Core tend to be characterized by vague descriptions of the expectations for specific kinds of writing at different levels of schooling (see Applebee, 2013). At the college level, students are often expected to perform a variety of sophisticated intellectual moves in their writing with little or no evidence that such expectations are reasonable. In other words, there exists no sound empirical basis to answer the question: What should first-year college students be capable of in their writing?

Our recent experience implementing a new large-scale first-year college writing program brought this problem into relief for us. In designing a writing seminar that is required of all first-year undergraduates, we had access to a rich scholarly literature about recommended curricula and pedagogies, approaches to placement and assessment, instructional uses of technology, and strategies for addressing various kinds of diversity, including second-language writing. What we lacked were empirically based descriptions of first-year college student writing that might enable us to establish reasonable expectations for our students' writing. We found ourselves especially concerned about setting reasonable expectations for their analytic writing, because available research and personal experience indicated that this kind of writing would be routinely expected of our students across the college curriculum (Carroll, 2002; Herrington & Curtis, 2000; McCarthy, 1987; Melzer, 2014; Sternglass, 1997; Walvoord & McCarthy, 1990).

We decided to take advantage of the unique opportunity we had to examine the writing produced by students who entered our university in the first semester of our new writing program. Specifically, we designed a study to describe the extent to which our students' writing demonstrated a variety of analytic "moves," or *topoi*, that other researchers have identified as common in academic, analytic writing at more advanced levels (Wolfe, Olson, & Wilder, 2014). We were interested in determining whether students employed these *topoi* in their writing for their required first-year writing course and, if so, whether the presence of those *topoi* affected the perceived quality of that writing. Ultimately, we conceived of our study as a step toward addressing larger—and more complex—questions about

what entering college students' analytic writing looks like and what is reasonable to expect from them after one semester of writing instruction.

## Review of Relevant Literature

Surprisingly few descriptions of large collections of student writing or of the rhetorical and analytic work students are capable of exist in the extensive literature on first-year college composition. Researchers have examined the comments written by first-year composition instructors on student papers (Haswell, 2006; Smith, 1997; Sommers, 1982) and the assignments written by instructors across the curriculum (Melzer, 2014; Soliday, 2011; Walvoord & McCarthy, 1990), and descriptive rhetorical analyses have been performed on student writing in primary and secondary grades (Britton, Burgess, Martin, McLeod, & Rosen, 1975; Engelhard, Gordon, & Gabrielson, 1992; Shield & Galbraith, 1998; Whale & Robinson, 1978). However, similar attention to student writing for first-year composition courses has primarily appeared in scholars' reflections on small numbers of student papers (see, for example, Bartholomae, 1985; Recchio, 1991) or in longitudinal case studies of small numbers of students (Beaufort, 2007; Carroll, 2002; Herrington & Curtis, 2000; McCarthy, 1987; Sternglass, 1997). While scholars' reflections on the writing of just a few students have yielded important theoretical insights—such as Bartholomae's (1985) insights into the challenges students face when attempting to enter disciplinary discourse—we are left wondering whether the student writing analyzed in this scholarship is somehow exceptional or might form the basis for patterns or trends in other students' writing.

One aspect of first-year college student writing that large corpus research has helped clarify is error. Kitzhaber (1963) classified all the errors instructors had marked in 495 student papers written for two composition courses at Dartmouth College; Connors and Lunsford (1988) classified errors in a national sample of 300 student papers. Lunsford and Lunsford (2008) repeated Connors and Lunsford's (1988) analysis with a national sample of 877 papers written for first-year composition courses and found that the papers in their sample were longer and represented a more diverse range of genres than those in the sample Connors and Lunsford (1988) had analyzed two decades earlier; their most noteworthy finding was that error rates in student writing had remained stable over time. The groundbreaking work of Haswell (1991, 2000) explored the complexity and rhetorical dexterity of student writing for first-year composition courses, but like studies of error, Haswell's studies tallied aspects of texts that are relatively unproblematic to identify and quantify, such as paper length and grammatical, stylistic, and word choice features. Haswell's (1991, 2000) analyses showed that student writing changes during the college years in terms of organization, specificity, coherence, diction, and syntax, but he was unable to draw conclusions about the types of arguments or analyses students made in their writing. Some large-scale corpus studies have analyzed students' engagement with secondary sources. For example, Howard, Serviss, and Rodrigue (2010) documented sophomore students' tendencies to "patchwrite" or

copy from sources rather than summarize. Aull (2015) and Aull and Lancaster (2014) analyzed the linguistic stance markers students used in placement essays to situate their responses to an article and found that students just entering first-year writing classes at the University of Michigan and Wake Forest University used more nonmetadiscursive first-person pronoun references, more emphatic boosters, and fewer hedges and concessions than did more experienced writers.<sup>2</sup>

Beyond such quantifiable grammatical, stylistic, citation, and linguistic features, perhaps more is now known about student writing outside of composition courses than inside them. Ironically, it was the dearth of knowledge about writing outside of composition and English courses that prompted researchers to undertake groundbreaking research that now informs our writing across the curriculum (WAC) and writing in the disciplines (WID) movements (Bazerman, 1988; Berkenkotter & Huckin, 1995; Halloran, 1984; Herrington, 1985; MacDonald, 1994; Myers, 1991; Nelson, 1990; North, 1986; Prior, 1998; Wilder, 2012; Winsor, 1996). This research is buttressed by the English for specific purposes and English for academic purposes movements, for which scholars trained primarily in linguistics use corpus studies to describe the writing done in disciplines and professions in order to better prepare nonnative speakers of English for writing in these contexts (see, for example, Hyland, 2000, 2004; Swales, 1990). Collectively, these studies illuminate student writing within majors, in graduate study, and in possible future professions. In comparison, current knowledge of writing produced by first-year composition students is lacking.

Recently, large corpora of student writing have been collected with the intent of describing students' writing as they move through their college experiences (see Lunsford, Fishman, & Liew, 2013; Sommers & Saltz, 2004), but few detailed descriptions of student writing have yet to emerge from these projects (see Donahue, 2014; Rogers, 2008). Instead, recent research on student writing has relied on students' self-reports of their writing habits, purposes for writing, self-assessments as writers, and perceptions of the impact of the writing instruction they have received (Bergmann & Zepernick, 2007; Delacambre & Donahue, 2012; James, 2008; Jarratt, Mack, Sartor, & Watson, 2009; Reiff & Bawarshi, 2011; Thaiss & Zawacki, 2006; Wardle, 2007; Yancey, Robertson, & Taczak, 2014). This trend has illuminated students' awareness of their writing processes, their attitudes toward and beliefs about writing, their genre knowledge, and the transfer (or lack of transfer) of their learning about writing in first-year composition to new contexts. And as was the case in Lunsford and Lunsford's (2008) study, this research conveys some sense of the variety of genres students encounter in their course work. But these studies reveal little about the texts students produce for first-year composition.

The present study was intended to illuminate students' writing in a common type of college-level assignment. Specifically, the study describes student writing completed in a first-year composition course in a particular place and time and in response to a particular writing task and rhetorical situation.

Our guiding research questions were:

1. What cross-disciplinary analytic moves are evident in the writing of first-semester college students?
2. To what extent does the presence or absence of these analytic moves correlate to instructors' evaluations of the quality of students' analytic writing?

Because the essays we collected were written by students who were just a few months removed from high school, we hoped this study might describe the analytic writing of students as they begin their college careers. Our purpose was to determine the extent to which entering college students are engaging with some of the analytic moves valued in the disciplinary writing that likely awaits them.

## Methods

### *The Corpus*

We collected final papers written by 860 consenting students at the end of the fall 2013 semester for a new, required first-year writing seminar at a state research university in the northeastern United States. The papers were written in response to the third in a three-assignment sequence shared across all sections of the course. Eighty-six papers (10% of the main sample) were randomly selected for our analysis. The university's Office of Institutional Research, Planning, and Effectiveness determined that the student writers of our sample adequately represented the racial and socioeconomic diversity of the institution's student population.

### *Setting, Participants, and Writing Task*

Like any writing by first-year college students, the essays we analyzed for this study must be understood within their institutional and instructional context and in view of the specific characteristics of the students who wrote them. However, key features of the assignment for which the students wrote these essays, the course within which they completed the essays, and the program within which that course was taught are common to first-year writing programs at other institutions. In addition, the academic and demographic profile of the undergraduate student body at this university resembles that of many midsized public universities whose primary charge is to educate residents of their states.

The university's approximately 13,000 undergraduates predominantly come from the surrounding region. Approximately 40% are first-generation college students; 82% apply for financial aid, and of those, 46% come from families whose annual income is below \$50,000; 51% of the student population is white, and approximately 40% of students are recognized as belonging to a minority (Black, Hispanic, Asian, etc.).

All first-year students are required to take the Seminar in Writing and Critical Inquiry (WCI) as part of a revised general education curriculum adopted in 2012. All sections of WCI share common curricular goals, methods such as conferencing and peer review, one collaborative assignment, and three sequenced writing assignments. These writing assignments, adapted from the composition program

developed at the University of Wisconsin, Madison (Weese, Fox, & Greene, 1999), emphasize academic inquiry. For Essay 1, students write to explore their own experiences and to identify a relevant issue for close analysis in Essay 2; the focus of Essay 3 is to develop an argument, building on the analysis completed for Essay 2, that contributes to a scholarly conversation about the subject of Essay 2. Instructors are expected to treat Essay 3 as an analytic essay that engages with sources, a type of essay frequently assigned as a capstone to a first-year writing course as it brings together research and analytic skills practiced throughout the term. While the 15 instructors involved in this study were free to define “analysis” in ways that fit their pedagogical styles and their versions of the assignment sequence, the instructors developed their definitions in the context of ongoing professional development activities focused on fostering a shared understanding of the nature and purposes of the assignment sequence. These activities included workshops, shared reading from Weese, Fox, and Greene (1999), and group discussions about how to define analysis and how to recognize it in student writing. A number of instructors elected to assign the textbook *Writing Analytically*, by David Rosenwasser and Jill Stephen. The conception of analysis informing these activities and materials is consistent with the characterization of analytic writing by Durst (1987) as involving generalization, classification, and evidence-based argumentation and reasoning to support an interpretive, explanatory thesis claim with “logical or hierarchical relations among points” (p. 350). This type of writing is distinctly different from summary and narrative, which rely more on chronological relations.

We elected to take a closer look at the final draft of this third essay assignment because we expected it to be students’ second formal attempt at analytic writing in the semester. We understood Essay 3 as building upon the close analysis in Essay 2 by extending analysis to more sources and situating the students’ analysis in the work of others. We wanted to examine what we had reason to believe would be the students’ best efforts, informed by repeated practice and guidance in analysis and produced near the end of an entire semester of composition instruction.

We recognize that our decision to analyze only responses to one assignment may result in a lopsided picture of students’ writing abilities. The “social turn” in writing studies does not allow us to ignore the fact that the nature of the task students respond to in their writing matters a great deal, as does the context of their writing and the background of the writer (Bizzell, 1982). While students may be judged to perform well in one mode of discourse, they may struggle in other modes, genres, and contexts. Despite these limitations, we sought to analyze a set of essays all written around the same time in response to a common assignment for which analytic writing was expected, with potentially similar levels of experience among writers. Our analysis thus provides a snapshot of student writing completed in the context of a required first-year writing course and intended to be analytic and engaged with a variety of source texts.

### **Coding Scheme**

Because any such description necessarily emphasizes some aspects of student writing while overlooking others, we chose to focus on several rhetorical and analytic

moves that student writers are routinely asked to perform in disciplinary contexts beyond first-year composition (Wolfe et al., 2014). Our reasoning for this decision included the widely held perception that first-year composition should prepare students for the specific writing challenges they will face in a variety of disciplines and professions. Thus, essays in the sample were analyzed using a coding scheme adapted from Wolfe et al. (2014). In seeking to promote the transfer of learning in writing courses to other contexts, Wolfe et al. (2014) developed a method called *comparative genre analysis* for understanding how genres function across academic contexts. In illustrating this method, Wolfe et al. (2014) identified several *common academic topoi* in seven academic disciplines that reflect both intentional heuristics and rhetorical moves intended to appeal to and find common ground with an audience. As Wolfe et al. (2014) explain, common academic topoi “are a finer-grained version of what Michael Carter (2007) calls ‘ways of knowing’ in a discipline” but may span genres and disciplines (Wolfe et al., 2014, pp. 46–47). These topoi, which Wolfe et al. (2014) identified in the writing of undergraduate students (p. 46), provide a potential framework for describing the writing of first-year students in light of the rhetorical demands of the writing these students will be asked to do in other academic disciplines. While Wolfe et al. (2014) acknowledge that there likely exist more common academic topoi beyond those they initially identified, we were eager to see if the topoi they identified were present in first-year students’ writing. Since Wolfe et al. (2014) used a genre from literary studies as the stepping-off point in their initial comparative genre analysis, and since most of the instructors in our program had been trained in literary studies, we reasoned that these topoi might be encouraged in the writing students did in our program and thus would likely appear in the students’ essays, making them a good place for us to start our examination of cross-disciplinary rhetorical moves in first-year student writing.<sup>3</sup>

The coding scheme developed for this study was an adaptation of Wolfe et al.’s (2014) descriptions of three common academic topoi: *pattern + interpretation*, *conceptual lens*, and *exception*; we developed a fourth category—*conversation*—by drawing from their discussion of citations and the importance of situating novel scholarly contributions.<sup>4</sup> Our coding scheme was thus intended to describe the extent to which the following cross-disciplinary rhetorical moves were present in the student essays we analyzed:

- **Conversation:** The paper locates its argument within a larger textual conversation on its subject matter by using appropriate sources and clearly distinguishing its voice from theirs. Other writers’ voices are explicitly attributed and given response. Phrases like those cataloged by Lancaster (2016), such as “some readers may object” or “others argue,” or phrasings such as “According to . . . ; however” or “While [author name] argues . . . , I claim” often signaled the presence of this move.
- **Patterns:** The paper identifies and examines a pattern or patterns operating within its subject matter. The paper “unearths” a pattern for readers to see by pointing to multiple examples that demonstrate its existence or to

trends in the data the paper presents. The use of terms and phrases such as “similarly,” “another example,” and “repeatedly” often signaled the presence of this move.

- **Conceptual lens:** The paper describes the conceptual lens or theoretical framework through which it arrives at its explanations. It might do this by clearly summarizing a text or texts or established point of view that informs its vision or forms its lens, or it might do this by articulating the writer’s own worldview or theoretical perspective. Terms and phrases such as “concept,” “framework,” “theory,” “model,” “understanding,” “is an example of,” “exemplifies,” and “illustrates” often signaled the presence of this move.
- **Exceptions:** The paper addresses anomalies or exceptions to its analytic argument. It may find ways to account for the anomalies within its argument, but it does not shy away from addressing them. The paper explicitly addresses data or evidence that do not fit its thesis. Terms and phrases such as “however,” “but,” “it should be noted,” “on the other hand,” and “an exception to this is” often signaled the presence of this move.

Excerpts from student papers drawn from our sample that exemplify each of these analytic moves described in the coding instrument can be found in the appendix. While above we identify some terms and phrases commonly associated with each move, our coding work did not involve simply tallying these terms and phrases. Determining whether a move was present required reading these phrases in context, and we found it was possible for a move to function independently of such linguistic markers. Further, our coding instrument includes a rating scale intended to describe the four analytic moves at a finer level of specificity than simply indicating the presence or absence of each move. The purpose of the scale is to capture students’ attempts to use a specific analytic move, even if the attempts were not fully carried through or successful. Our rating scale for each analytic move includes four possible scores:

- 3 = The analytic move is masterfully executed in the paper.
- 2 = The analytic move is present in the paper.
- 1 = Evidence suggests that the analytic move is attempted but not fully executed in the paper.
- 0 = The analytic move is not present in the paper.

Working with a colleague who teaches in the university’s Program in Writing and Critical Inquiry, the authors tested this instrument on 10 student essays randomly drawn from the larger sample of 860 essays collected for this study. Each of us coded the essays independently. We then compared and discussed our scores to arrive at a consensus score for each category for each essay. On the basis of these discussions, we refined the coding instrument and tested it again in the same way. Final adjustments were made to arrive at the instrument used to code the sample of 86 essays selected for this study.



The authors independently coded all 86 papers in the sample and compared scores. Discrepant scores were resolved through discussion to determine a final score. We addressed the issue of discrepant scores in this manner in order to enhance the validity and reliability of our analysis. Research indicates that some methods for scoring essays in large-scale assessment consistently achieve higher rates of inter-rater reliability than other methods (Johnson, Penny, & Gordon, 2001; Stemler, 2004). Although resolving discrepant scores through discussion is time-consuming and can be impractical for repeated, large-scale, high-stakes assessments (Johnson et al., 2001, p. 246), we believe it resulted in more valid scores than other common methods, such as combining scores or using a third coder who had not read the entire sample.

### ***Inter-rater Reliability***

As noted above, final codes for each essay in the sample were determined collaboratively by the two authors after each had independently coded the essays. However, we did calculate inter-rater reliability for the scores we assigned independently before conferring about discrepant scores. The percentage of agreement between our codes for the four analytic moves ranged from 84% to 55%, with 98% to 90% of our codes falling within one point of each other.<sup>5</sup> The percentage of agreement does not account for the fact that some coding agreement may be the result of random chance. Outside of the category *exceptions*, an analytic move that appeared rarely in our sample, all our ratings were positively correlated ( $p < .05$ ) with reliability scores (calculated using Pearson's correlation coefficients) ranging from .63 to .25; reliability scores for the categories *conversation* (.61) and *conceptual lens* (.63) reflect acceptable levels of agreement in recent writing research (Bang, 2013). Nonetheless, for the reasons explained above, in the results that follow we report the scores assigned through the collaborative process described earlier.

### ***Paper Grades***

In addition to the codes we assigned the papers in our sample, we also had permission to examine the grades the instructors assigned to these papers. With several important caveats, we use these grades as an imperfect measure of the rhetorical effectiveness of the papers in our sample, rather than imposing a holistic evaluation from an "outsider" perspective (i.e., one not in the classrooms with the students and instructors for whom these papers were written). However, we cannot say with certainty that these grades measure the rhetorical effectiveness of these papers. Other factors may have influenced the grades the instructors assigned. For instance, it is not uncommon in this course for some portion of a final paper grade to be derived from the instructor's assessment of the effort the student put into the process of drafting, responding to peer and instructor feedback, and revising the paper. Additionally, how much of these grades is determined by factors that do not necessarily indicate rhetorical effectiveness (such as effort) may vary by instructor, and in this sample we had papers graded by 15 different instructors. Despite these important caveats, in the analysis that follows we chose to use the actual grades these papers received in situ because of their authenticity. We gave

no guidance to instructors on how to grade as part of this research project; they used their routine grading practices, and all papers were collected for the study after final grades for the course had been submitted.

## Results

Our analysis yielded three main findings:

1. Few papers in the sample showed evidence of the moves of analytic writing that are valued in disciplines across the academy.
2. Those papers that effectively used cross-disciplinary analytic moves received higher grades from instructors than papers that did not.
3. Papers that included more of the cross-disciplinary analytic moves received higher grades than papers with fewer such moves.

### Number of Papers Using Each Move

Although a majority of the papers showed evidence that students used or attempted to use one of the analytic moves we coded for (*conversation*, 63.96%), most papers in this sample showed no evidence of even an attempt to use the *patterns* (31.39%), *conceptual lens* (18.6%), and *exceptions* (18.6%) moves (Figure 1).

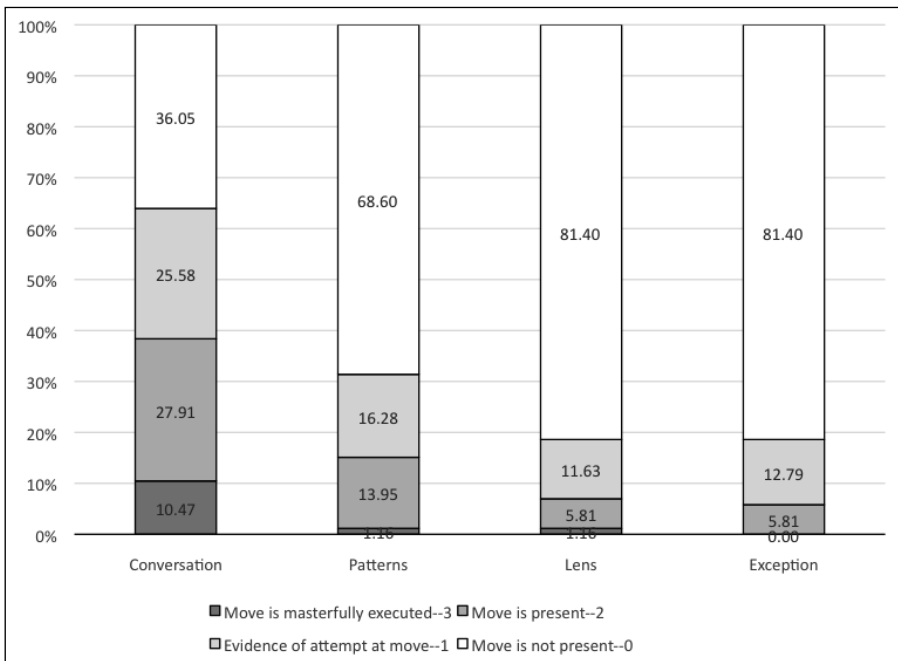


FIGURE 1. Percentage of papers using each move

### *Relationships between Use of Analytic Moves and Paper Grades*

Papers that showed evidence of effective use of the analytic moves tended to receive higher grades than those that did not. Paper grades were weakly correlated with the scores papers received for their use of *conversation* ( $0.30, p < .01$ ) and *patterns* ( $0.22, p < .05$ ). We grouped the papers by the grade each received (collapsing + and – grades into one larger group, so that, for instance, B+, B, and B- papers were grouped together into one B paper group) and determined a mean analytic move score for papers in each grade group by averaging the 0–3 codes we assigned to each paper for each category. Papers that received higher analytic scores tended to be more highly evaluated by instructors, with A papers receiving (on average) the highest scores in our analysis, B papers receiving the next highest scores, and papers assigned Cs or lower grades receiving the lowest scores across all four cross-disciplinary analytic moves, as a multivariate within-subjects ANOVA indicated:  $F(4, 80) = 32.33, p < .001$  (Figure 2). A between-subjects test indicated a significant effect for grade for the moves *conversation*:  $F(2, 83) = 5.13, p < .008$ ; and *patterns*:  $F(2, 83) = 3.32, p < .041$ . A paired samples test indicated that papers that received As from instructors also received significantly higher mean scores for the *conversation* move than papers that received instructor grades of B, C, or lower,  $p < .05$ .

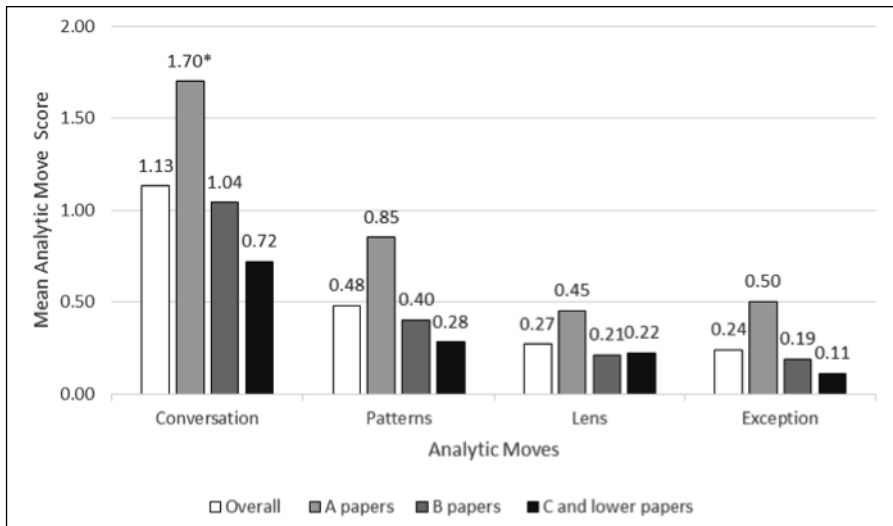


FIGURE 2. Mean analytic move scores for all papers combined ( $N = 86$ ), A ( $n = 20$ ), B ( $n = 48$ ), and C papers ( $n = 18$ ); for scores, 3 = the analytic move is masterfully executed in the paper, 2 = the analytic move is present in the paper, 1 = the analytic move is attempted in the paper (but the paper does not fully succeed at executing the move), and 0 = the analytic move is not present in the paper.

\*Significant difference from means of other grade groups at the  $p < .05$  level

We converted the letter grades that papers received from instructors to their numerical equivalents (for instance, B+ = 3.3, B = 3.0, B- = 2.7) in order to compute mean grades assigned by instructors for groups of papers. The number of analytic moves evident in the papers was positively correlated with the grades the papers received from instructors. For analytic moves scored at 2 or 3 (meaning that the analytic move was clearly present or masterfully executed in the essay), the correlation was 0.37,  $p < .001$ . This means that the greater the number of analytic moves students used in their papers, the more likely the students were to receive a higher grade on their papers from their instructors. In order to calculate a mean instructor-assigned paper grade, we divided the papers into three groups by the number of analytic moves that were evident in each paper: two to three analytic moves per paper ( $n = 14$ ), one move per paper ( $n = 27$ ), or no moves ( $n = 45$ ). A multivariate ANOVA indicated a significant effect of number of analytic moves used on the grades the papers received,  $F(2, 85) = 8.34$ ,  $p < 0.001$ . Post hoc tests revealed that the mean paper grade for papers that did not evidence any of the analytic moves was significantly lower than the grades instructors assigned to papers using one move or two to three moves,  $p < 0.02$ . As Figure 3 shows, papers in which two to three of the four analytic moves were evident received a mean grade of 3.41, or B+, while papers in which only one of the analytic moves was evident received a mean grade of 3.15, or B, and papers in which none of the analytic moves was evident received a mean grade of 2.77, or B-.

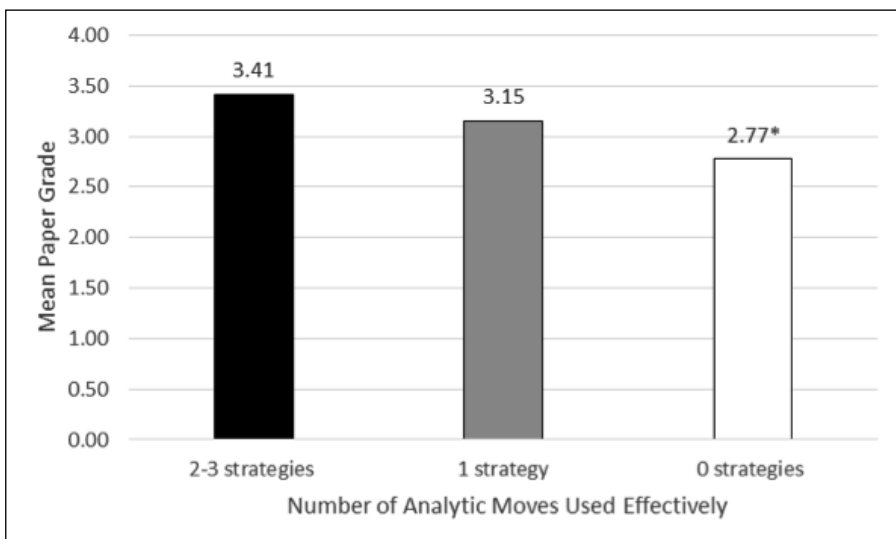


FIGURE 3. Comparison of paper grades and number of strategies used; for paper grades, 4.00 = A, 3.00 = B, 2.00 = C For 2-3 strategies,  $n = 14$ ; for 1 strategy  $n = 27$ ; for 0 strategies  $n = 45$ .

\*Significant difference from means of other grade groups at the  $p < .02$  level

### ***Qualitative Comparison of Papers Receiving High and Low Grades***

Though not the focus of the present study, some discussion of the rhetorical moves made in the papers that did *not* effectively use the topoi we codified may help clarify the impact of the moves we did investigate on instructors' grading decisions. We did not tally the range of other rhetorical moves made in our sample, but we informally began to notice some patterns among papers which we coded as not using any of the strategies (0) or at best only attempting some of the strategies (1) and to which instructors gave grades of C or lower. While these papers were certainly diverse, they tended to use sources in ways that avoided deep engagement. They quoted, paraphrased, and cited other texts like the other papers in the sample did, but they were more likely to use other texts only as sources for information and facts pertaining to their topics. In other words, they were far more summative and reportorial than analytic or interpretive. Facts from sources on the effects of topics such as human trafficking or legalizing marijuana were presented in paragraphs that might organize information from diverse sources (though often these papers treated different sources in distinct and discrete paragraphs), but the voice of the student writer rarely intervened to evaluate the quality of different sources, ask questions not raised in sources, or weave diverse sources together. Additionally, reportage from sources was often one-sided, without any sense of diverse viewpoints or exceptional information. Such moves contributed to our sense that such papers lacked depth; for example, a student writer might extol some benefits of legalizing marijuana without mentioning potential drawbacks or why the current laws exist, leaving us feeling that the essay only skated the surface.

In contrast, the few papers which we rated as effectively using (2) or masterfully using (3) at least three of the four strategies we coded for and to which instructors gave A grades pursued their topics with the kind of depth and critical engagement that we are confident most college instructors who read student writing are pleased to see. For example, one such paper presented a complex discussion of the problem of hunger in the United States. After using eight sources to explore the existence of "food deserts" as a contemporary cause for hunger, the writer addressed the history of welfare and federal food aid programs in the United States, even exploring their roots in English "poor laws." Next, the writer evaluated different solutions proposed for the problem of hunger, situating his own views among published views he agreed and disagreed with. The essay ended with the student writer's proposal for federal aid, which he supported by returning to the history he earlier tracked to show that federal intervention has previously been effective on this front.

Another such paper took a more personal approach, exploring the writer's own reactions over his lifetime to his mixed ethnic and racial heritage. This essay was among the few essays which "masterfully" used the *conceptual lens* strategy (see the *conceptual lens* example in the appendix for a sample passage from this essay). The student writer used the description of stages in a psychological "developmental model" of biracial identity formation and acceptance presented in one of his sources to map the development of his own identity and that of one of the other authors he cited who wrote about her own upbringing as a biracial

child. In this mapping of a conceptual lens onto his own life and another author's, the student writer was careful to note not only similarities between their experiences—patterns which supported the developmental model—but also important differences and exceptions to the “rule” of the developmental model. Interestingly, both of these examples of A papers contained sentence-level grammatical errors, some of which made comprehension occasionally challenging. We speculate that these students' use of sophisticated analytic moves may have caused them to lose control over some sentence structures, but that their use of these moves may have so impressed instructors that they were more forgiving of sentence-level concerns.

## Discussion

This study indicates that at the end of their first semester of college, when fulfilling a final essay requirement that called for analysis and argumentation in a first-year composition course, most students did not use four common academic topoi that have been documented as valued analytic moves in disciplinary discourses across the academy. It is possible that these students elected not to use these moves in their writing, or that their instructors discouraged the use of such moves; more plausibly, the student writers of essays in our sample may not have known how to use, or may have been unaware of the existence of, these analytic moves. We cannot say why this is the case, however. Our methods preclude us from surmising that what we saw in the student papers we collected was a result of what was or was not taught in the students' first-year composition course or in their earlier schooling.

Nevertheless, the nature of the three-assignment sequence in the course for which the papers in our study were written reasonably led us to expect to see common analytic moves in those papers; moreover, the program's guidelines for the third assignment explicitly called for students to “contribute to an ongoing conversation” and “take part in a sophisticated conversation about an issue of importance to them and to others in ways that are appropriate to academic discourse.” This might explain why the *conversation* move was the most common among the four analytic moves we coded for: It is possible that instructors emphasized this move but did not explicitly teach or emphasize the other moves. Still, the relative rarity of any of the four analytic moves surprised us.

While this study shows us how seldom these students applied these common academic topoi in response to an assignment that would seem to invite the use of these analytic moves, our research simultaneously provides further support for Wilder and Wolfe's (2009) finding that academic topoi are powerfully persuasive to the audience for student papers, the highly credentialed academics who evaluate these papers. Wilder and Wolfe's (2009) study similarly found that the more academic, analytic topoi students used in their papers and the more effectively they used them, the more highly instructors evaluated these papers. Although Wilder and Wolfe (2009) were analyzing student discourse and academic topoi within the specific context of the discipline of literary studies, we note (along with Wolfe et al., 2014) that several of the professional-level topoi students in their study were rewarded for using are at play in other disciplines, too. Wilder (2012) argues that

instructors' preference for these topoi reveals the importance of appeals to ethos and pathos in student writing; while instructors may not be aware of or explicitly teach the largely tacit, specialized topoi their discourse is steeped in, they may appreciate—and reward—student discourse that strikes them as sounding like the words of a colleague (pp. 102–103).

Although the results of our study are descriptive, we feel they capture some of the challenges student writers and their instructors face. It may be the case that entering college students are not developmentally ready to make some kinds of analytic moves valued in advanced scholarly writing. Some research suggests that these strategies, which involve appreciating complexities and acknowledging the limitations of one's own views, may become easier to use and more familiar with some maturity. For instance, some of the changes Neely (2014) documented in students' epistemological views after they took a one-semester first-year composition course focused on argumentative writing would seem to support students' use of the analytic moves we coded for, such as their developing views on the uncertainty of knowledge and the constructive place of disagreement in writing. Neely (2014) also found that the papers of first-year composition students who more strongly adhered to these epistemologies received higher ratings from composition instructors. Yet research has also shown how students' rhetorical and epistemological views may shift long before any effect of these views can be detected in their writing (Carroll, 2002; Durst, 1987; Haas, 1994; Herrington & Curtis, 2000). Thus, it may be that first-year composition courses or similar experiences help foster a mindset that will eventually make using these analytic moves more comfortable and commonplace, but at the end of the first semester of college, students are not yet ready to enact these moves in their writing. It may also be the case that students' previous educational experiences have not adequately prepared them to complete writing tasks that they may in fact be capable of performing. As we noted earlier, because of education policy initiatives that often emphasize standardized assessments, US high schools may not be fostering the analytic thinking, reading, and writing these strategies represent.

Regardless of whether the issue at hand is one of developmental readiness or adequate preparation, as college writing teachers, we would like to have seen more evidence that students were attempting, if not fully realizing, these four analytic moves. As Figure 1 shows, the majority of papers in our sample showed no evidence of their student writers attempting to use the *patterns*, *conceptual lens*, or *exceptions* moves; moreover, 36% showed no evidence of *conversation*. Although it may be unrealistic to expect first-year college students to have mastered sophisticated analytic moves that are routine only in the most advanced professional writing, we were nevertheless surprised by how few students even attempted one or more of these moves. It may be the case that one 15-week writing course is insufficient to help students fully make the transition to college-level writing, a conclusion supported by some research (see Haswell, 1991). If so, then our descriptive findings may lend support to requirements at many institutions that extend writing instruction beyond a single first-year course. Perhaps the regular use of these common

academic *topoi* happens later, when students are developmentally ready to use them, or perhaps these conventional forms of analytic argument must be learned within the context of the disciplines. It may be that these common academic *topoi* cannot be readily learned in a predisciplinary (Diller & Oates, 2002) environment that requires students to compose versions of general-academic or “mutt” genres (Wardle, 2009) which do not exist “in the wild.”

But it may also be the case that students need more explicit instruction in the rhetorical moves of analytic writing than many well-trained first-year college composition instructors provide. Outside of English for academic purposes approaches to L2 instruction, such explicit product-focused approaches are not associated with mainstream composition pedagogies; even genre-based approaches emphasize genre awareness over genre acquisition (Devitt, 2004). Research on academic literacy reveals how such “rhetorical process knowledge” (Geisler, 1994) is typically imparted only implicitly by expert instructors often unaware of its importance for academic success (Russell, 2002). Nonetheless, some studies indicate that adolescent students develop “critical thinking skills” through explicit instruction (Marin & Halpern, 2011) and that college students can use disciplinary academic *topoi* more effectively when they experience explicit instruction in these techniques (Wilder & Wolfe, 2009). Importantly, Wilder and Wolfe’s (2009) study examines the writing of students with one to two more years of college experience than the students whose writing we analyzed for the present study; students in Wilder and Wolfe’s study might have been more mature writers and were taking a course designed to prepare them for a major discipline they had elected to pursue, whereas students in the present study had yet to take any courses providing instruction in writing within a specific discipline. Yet we are left to wonder if we would have seen more evidence that the writers of the essays in our sample were attempting various analytic moves if those students had been explicitly coached to do so.

Thus, we see a need for research in at least two important directions. First, our inability to discuss causation in relation to our study points to a need for longitudinal research like the kind Haswell (1991, 2000) conducted with large collections of student writing. Like Haswell’s early work (1991), such studies could compare responses to similar prompts by different writers at various stages of development and acculturation (such as first-year college students, junior-year college students, and professionals), or examine samples of the same students’ writing over time for the analytic qualities we tried to capture in the present study.

Second, we see a need for more large-scale, rhetorically rich descriptions of first-year college student writing from different contexts. In addition to the extant archives of student texts awaiting this type of analysis from prestigious, highly competitive institutions such as Harvard, Stanford, and Dartmouth, we need large-scale descriptions of student writing at different types of institutions, such as community colleges and midsized state schools like ours, whose students often differ noticeably from the students at prestigious institutions in terms of socioeconomic factors and academic preparation. For instance, our corpus likely varies a great deal from the one Aull and Lancaster (2014) worked with from the



University of Michigan and Wake Forest. While we did not tally the same stance markers they did, we suspect, on the basis of our work with the *conversation* move, that the papers in our sample would evidence fewer signals that their writers were positioning their own views in relation to the views expressed in other texts. This observation underscores for us the concern that our results are not generalizable, though we hope the description of first-year college student writing in this study will provide insight into students writing in similar circumstances in similar postsecondary institutions. We need research that describes student writing from a variety of types of institutions in order to learn about potentially common developmental aspects of student writing regardless of context, and about the ways in which context shapes student writing—how differences in opportunities, resources, support, motivation, and belief in one’s own abilities might affect the writing that entering college students produce.

Beyond these concerns, we wonder what our findings might suggest about the extent to which first-year writing courses contribute to students’ ways of thinking. The analytic moves we coded for reflect a set of values—which are common in academic discourse and encouraged in college assignments (see Melzer, 2014, p. 91)—about how to engage in inquiry and therefore how to think about important questions or problems: embracing complexity, remaining open to alternative explanations and viewpoints, considering multiple possibilities in explaining important questions or developments. How we teach common academic assignments, such as the assignment for which the students in our study wrote their essays, is thus part of a broader effort to encourage students to embrace these values, which might well be at odds with the ways students are now being taught to engage in inquiry in secondary schools in the wake of reform efforts like the Common Core movement.

## APPENDIX: EXAMPLES FROM THE CORPUS OF THE CROSS-DISCIPLINARY ANALYTIC MOVES

### Conversation

Many people believe that the best solution is to get to the root of the problem instead of waiting for teenagers to start using molly, but there are many arguments addressing how to solve the problem. Some (Crandall, 2007; Straus, 2010) argue that rap music should be censored to keep molly references from influencing teenagers, while others (Johnson, 2013) argue that drug references in popular music don’t influence teenagers at all. The best solution, however, would be to bring awareness to teens of the real dangers of molly. [Essay 35: “Genetically Modified Organisms”]

### Patterns

It is also strange that Oscar sees his first faceless man in a rocking chair, just like Beli had seen her first faceless man in a rocking chair. Another similarity that Beli and Oscar have in this situation are that they were both brought to the cane fields because of someone they loved. Could this not be the perfect example of fuku? The parallelism between the characters situations are so strikingly similar that you can hardly call it a mere coincidence. It seems

that idea of fuku goes beyond the idea of coincidences and to the idea of an inescapable curse that will affect the whole family. [Essay 88: “Analysis of *The Brief Wondrous Life of Oscar Wao* by Junot Díaz”]

### Conceptual Lens

In “Claiming A Biracial Identity: Resisting Social Constructions of Race and Culture,” Carmen Williams (1999) argues that race is a socially constructed category that has been misconstrued as biological (p. 34). She explains how a person such as herself whose heritage consists of two races is confronted with the problem of not fitting neatly within the designed frameworks of the socially constructed races. Williams gives an example from her own childhood, when she was unself-conscious about race. Her experience is consistent with W. S. Poston’s (1990) first stage in her proposed model of biracial identity development. In this first stage of identity development, “The child will tend to have a sense of self that is somewhat independent of his or her ethnic background” (Poston, 1990, p. 153). This was the case for Williams up until the age of eight, when she moved to America during a period when racism was still very evident in society. In my own case, I did not think much about race until the age of six. Poston’s second stage of group organization is evident when Williams went to college and explored black culture. I experienced Poston’s second stage sooner than Williams as a result of my social environment and the consistency of discrimination in the form of “jokes”. [Essay 23: “Taking a Selfie”]

### Exceptions

When it comes to those who are serious about losing weight in a healthy way, calorie counting can be quite beneficial. . . . For some people, however, calorie counting can result in a possible unbalanced diet. People who obsess about counting their calories spend too much time making sure their calorie intake is low and consequently entirely ignore eating a nutritionally balanced diet (i.e., they do not eat items from all of the important food groups). For example, extreme fad dieters who might only eat “fruits and vegetables” all day tend to take in more sugar and carbohydrates in a day than is healthy. (Stoppard, 2013, p. 36) This kind of calorie counting can actually have the reverse effect and result in weight gain. [Essay 58: “Should Calories Count?”]

### NOTES

1. According to the National Center for Education Statistics (2013), approximately 3.6 million first-time, first-year students were projected to enroll in U.S. colleges and universities in the fall of 2015. The great majority of those students would have been required to take a first-year writing course. Even allowing for students who bypass the first-year writing requirement by virtue of college placement exams, AP credit, etc., it seems fair to conclude that well over two million students enroll in first-year college writing courses in the United States each year.
2. Lancaster (2016) delved further into how students worded concessions and objections in these essays, in comparison with textbook advice and more experienced writers.
3. Wolfe et al. (2014) used the genre of literary analysis as the starting point for their comparative genre analysis because, they argued, many college writing instructors are familiar with this genre.

From this starting point, they demonstrated how some topoi conventional to this genre work in other disciplinary genres where other conventions for stasis issue, organization, and citation can be very different. They did so to demonstrate how instructors could draw from their existing knowledge to teach potentially transferrable rhetorical knowledge while avoiding erroneous generalizations about academic discourse.

4. Our understanding of the *conversation* topos is also informed by Wilder's (2012) description of how a *mistaken critic* topos operates in literary analysis, and Wolfe et al.'s (2014) explanation of how disciplines vary in their handling of disagreement through citation use (pp. 58–59).

5. Percentage of agreement between coders on the individual codes is as follows: *conversation* 55%, *patterns* 64%, *conceptual lens* 84%, and *exceptions* 71%. Percentage of agreement within one point between codes on the individual codes is as follows: *conversation* 92%, *patterns* 91%, *conceptual lens* 98%, and *exceptions* 90%.

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*Initial submission:* January 19, 2017  
*Final revision submitted:* September 8, 2017  
*Accepted:* September 14, 2017