

# The Power of Relevant Models: Using a Corpus of Student Writing to Introduce Disciplinary Practices in a First Year Composition Course

Jack A. Hardy, Emory University, Ute Römer, and Audrey Roberson, Georgia State University

**Abstract:** In attempts to find appropriate and authentic materials for students who are developing their academic writing skills, instructors often turn to works written by professional academics. However, genres such as published research articles and textbooks in specific disciplines may not be the most suitable models for what first year composition writers are expected to produce. This article suggests using a corpus of successful student writing across disciplines as a more appropriate and more realistic model for lower-level writing students. It describes a first year reading and writing course (taught at an American liberal arts college by the first author of this article) that incorporates the Michigan Corpus of Upper-level Student Papers (MICUSP) in helping students become ethnographers of disciplines and genres. As lower-level university students explore disciplines and narrow down their desired fields of study, MICUSP is used as a source of data from which students can (1) conduct linguistic research, (2) write subsequent research papers, and (3) become familiar with potential target academic discourse communities. Using a pedagogy of writing about writing, this process helped students raise their awareness of disciplinary practices. The article gives an overview of the course, focusing on class activities and including student evaluations of these activities. It demonstrates how a corpus like MICUSP can function as a useful and relevant tool in a discipline-specific, genre-based reading and writing course.

## Introduction

Concern among writing teachers that first year university students are not developing the writing skills necessary for success in higher education is not a new issue. Early surveys of university writing teachers revealed that, among other shortcomings, first year composition (FYC) students were not able to organize information effectively and failed to use transitions between ideas (Newkirk, Cameron and Selfe, 1977). More recently, Defazio and others (2010) noted that FYC students lack awareness of academic writing conventions. Composition teachers, the broader university faculty, and researchers alike are certainly interested in continuing the conversation about how best to serve first year writing students.

The movement toward discipline-specific writing in colleges, both for native and non-native speakers of English, is one response to the task of developing academic writing skills among undergraduate

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students. Writing Across the Curriculum (WAC) and Writing in the Disciplines (WID) programs encourage students to practice writing not only in courses designated for this skill, but also in various disciplinary courses. This kind of practice allows students to examine the writing tasks and writing conventions that are common across the university.

Early in the WAC movement, first year courses were implemented in which freshman writers were exposed to reading and writing tasks from different disciplines, and sometimes wrote in areas related to their other courses. This approach has been largely abandoned, as writing scholars noted that there is "a set of very large skills that are discipline- and genre-specific and that need to be taught within the context of these activity systems" (Perelman, 2011). Perelman describes that as a response to this need to foster more awareness of writing conventions in specific disciplines, upper-level courses within academic majors were designated as writing intensive. Finally, in the "stand-alone" upper-division model, courses like Writing for Arts and Humanities have been taught by instructors from English departments.

As has been shown in the work of genre theorists (e.g., Beaufort, 2007; Devitt, Reiff, & Bawarshi, 2004; Johns, 1997, 2002), however, such disciplinary-specific instruction has become useful in the FYC setting. Researchers and educators who specialize in examining the practices of various disciplines are able to examine and see through what Russell (1990, 1991) has described as disciplinary transparency when it comes to writing: that writing is seen in many disciplines to be a static and generalizable practice that can be acquired outside of a given discipline.

Although WAC and WID provide pedagogical advantages, they are not without challenges for instructors and students. For example, much research has shown that there is no singular universal "academic discourse". Instead, students must adjust their writing to various academic discourse communities, across and within disciplines, depending on their audience and task (Hyland, 2004, 2012). It may thus behoove students to learn about how to study writing, rather than to be taught specific practices (Downs & Wardle, 2007).

Another challenge to discipline-specific writing instruction is that instructors in disciplines other than those that study writing and literacy may struggle with what exactly to teach about writing in their own discipline. Thus, they may not be aware of the needs of students whose writing competency is still in development. This may be also true for instructors who teach writing practices of disciplines which are not their own. In other words, as Spack (1988) contends, writing instructors may not be well versed in the practices and expectations of their peers in other disciplines. Therefore, there is a schism between "content" instructors who may lack expertise in literacy practices and instruction, and composition instructors, who may be equally ignorant to those disciplines.

In this article, we explore the possibilities for and advantages of using a corpus (a large electronic text collection) of advanced student writing collected from multiple disciplines to help FYC students and teachers explore context-specific writing. This tool helps to incorporate disciplinary practices even in a first year course of students with a number of academic goals and trajectories. As we describe in the remainder of the article, it is our hope that using such types of corpora will alleviate some of the challenges described by Spack (1988). Authentic, appropriate models of writing in the disciplines should help instructors, both composition teachers and those teaching writing in their own disciplines, to supply their students with tools for investigating disciplinary writing. In other words, a corpus of student writing can be used as a valuable tool to investigate and to write about writing. In what follows, we present an overview of the Michigan Corpus of Upper-level Student Papers (MICUSP) and describe how this resource was used in one first year writing course taught at a 2-year American liberal arts college.

## Using a Corpus in the Composition Classroom

A corpus (plural corpora) can be defined as an electronic collection of texts from spoken and/or written sources that is used in language-related scholarship. Such a text collection may include conversation or interview transcripts, newspaper texts, journal articles, blogs, and a variety of other language samples. Corpus applications range from linguistic research for dictionary making to literary analysis and language teaching. Corpus analysis refers to the ways in which corpora are accessed as sources of data in research and teaching. A growing body of literature on corpus analysis and its pedagogical applications (see Flowerdew (2012) and Römer (2011) for overviews) provides evidence for the value of corpora in teaching contexts, including the teaching of academic writing. Among other things, corpora provide frequency information that guides instructors or materials designers in deciding what to include in a course, and information on collocations (words that frequently co-occur with one another) and language patterns that give insights into central meanings created in a specific type of language. In the context of teaching writing, a corpus, as a large repository of authentic text samples, is a valuable tool that may offer answers to student questions about how a text is organized and which types of phrases it commonly contains.

Corpora have been used as teaching and learning tools inside and outside the classroom for almost three decades now. Tim Johns pioneered pedagogical corpus applications in grammar and vocabulary classes for international students at the University of Birmingham (UK) in the 1980s and suggested to "confront the learner as directly as possible with the data, and to make the learner a linguistic researcher" (Johns, 2002, p. 108). Learners interact with the corpus through a computer interface (or access corpus-derived materials provided by their instructors) and explore vocabulary co-selections, language structures, or textual patterns in an autonomous fashion. This method is now widely known under the label "data-driven learning" (DDL; see Johns, 1986; 1994). Inspired by Johns' work, a number of applied linguists and language teachers have discussed ways in which corpora and corpus-derived materials can be used by language learners. Bernardini (2002), for example, has described the positive effects of what she calls "corpus-aided discovery learning" with the British National Corpus, and referred to corpora as "rich sources of autonomous learning activities of a serendipitous kind" (p. 165). Kettemann (1995) has also stressed the exploratory aspect of DDL and considered corpus work in the language teaching classroom "motivating and highly experiential" for the learner (p. 30). Further advantages of corpus use with learners have been suggested by scholars like Sinclair (1997), who noted that, for the learner, "[c]orpora will clarify, give priorities, reduce exceptions and liberate the creative spirit" (p. 38). The effectiveness of DDL and its awareness-raising potential has been demonstrated in a range of studies in applied corpus linguistics (for examples see Boulton, 2009; Cresswell, 2007; Granath, 2009; Yoon, 2008). As Yoon (2008) observed in a study on the influence of corpora use on learner academic writing, "students assumed more responsibility for their writing and became more independent writers" (p. 31).

Echoing these researchers' thoughts on the value of corpus use in pedagogical contexts, we would like to argue that DDL is not just beneficial for language learners who study English as a second or foreign language, but also for native speakers of English who wish to familiarize themselves with novel contexts and genres. We believe that access to the right types of corpora can help students, independent of whether they are native or non-native speakers, in discovering important conventions in academic writing and in acquiring unfamiliar practices in a chosen discipline.

As the case study discussed below demonstrates, a corpus of advanced student writing across multiple disciplines can help students in a FYC course explore central aspects of academic writing and develop context- and discipline-specific writing skills. This is in direct response to the call of

Downs and Wardle (2007) who conclude that there are few appropriate resources (e.g., textbooks) available for FYC students. Instead, we would conclude that in addition to existing resources designed more for second language users (e.g., Swales and Feak, 2012), corpora of student writing can be a valuable tool for students to not only write about writing, but to scientifically analyze and then write about writing.

The corpus that the students in our case study had access to is the Michigan Corpus of Upper-level Student Papers (MICUSP). We believe that, because of its coverage and availability, MICUSP can be a very useful resource to composition teachers and their students. MICUSP is an electronic collection of 829 A-graded papers written by final year undergraduate and first, second, and third year graduate students at the University of Michigan in Ann Arbor (O'Donnell & Römer, 2012; Römer & O'Donnell, 2011). MICUSP is freely available to teachers, students and researchers through the user-friendly online search and browse interface "MICUSP Simple".

The corpus was designed to provide a global snapshot of high-quality student writing assignments from a large American research university. The papers in MICUSP come from different disciplines, ranging from Humanities and Arts over Social Sciences to Physical Sciences, and together make up about 2.6 million words. The sixteen disciplines included in MICUSP are, in alphabetical order: Biology (BIO), Civil and Environmental Engineering (CEE), Economics (ECO), Education (EDU), English (ENG), History and Classical Studies (HIS), Industrial and Operations Engineering (IOE), Linguistics (LIN), Mechanical Engineering (MEC), Natural Resources and Environment (NRE), Nursing (NUR), Philosophy (PHI), Physics (PHY), Political Science (POL), Psychology (PSY), and Sociology (SOC). MICUSP texts do not just span a range of disciplines, they also capture a variety of different paper types: argumentative essays, creative writing samples, critiques or evaluations, reports, research papers, research proposals, and response papers.

The corpus, the first of its kind in North America, enables teachers and writing researchers to investigate the written discourse of proficient, advanced-level native- and non-native speaker student writers. It also provides students with a wide selection of successful writing samples that may serve as models for their own academic writing. We recognize, however, that such samples may not be appropriate models of writing for every context, academic or otherwise.

## Providing Students Access to Successful Writing Samples from Hundreds of Peers

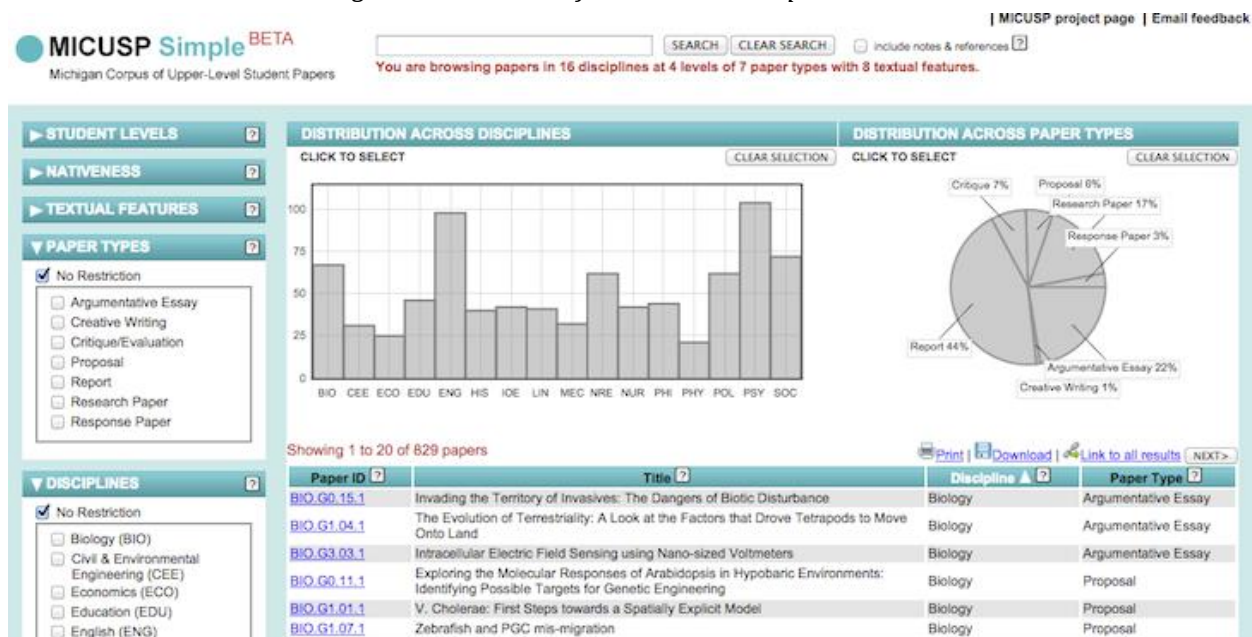
The MICUSP Simple interface, accessible at <http://search-micusp.elicorpora.info/>, allows students, instructors and writing researchers to browse papers by type (e.g. report, argumentative essay) and discipline (e.g. Biology, English), and to search for words and phrases in the entire corpus (or in subsets of it). The interface turns the corpus into a 2.6 million-word tutoring tool that helps students learn how to write, guided by examples from hundreds of peers. As our case study below shows, MICUSP Simple can be beneficial to students in learning more about their target disciplines and in developing discipline-specific writing skills.

In MICUSP Simple, the 829 papers in the corpus are organized by academic discipline, student level, student nativeness status, and paper type. MICUSP papers have also been labeled for whether or not they contain any of the following eight textual features: abstract, definitions, discussion of results, literature review, methodology section, problem-solution pattern, reference to sources, and tables, graphs or figures. The selection of these textual features was inspired by conversations the MICUSP compilers had with experienced writing instructors at the University of Michigan who were looking

to identify suitable examples of papers that illustrated the features in our list for use in their writing classes.

Let us take a look at the core features and functions of MICUSP Simple. Figure 1 provides a screen capture of the MICUSP Simple website. The bar chart in the middle and the pie chart to the right illustrate how the 829 papers in the corpus are distributed across the 16 disciplines and 7 paper types. We see that there are particularly large numbers of papers from English and Psychology students and that the most common paper types in the set are report and argumentative essay. The user can interact with these charts by clicking on a bar or a pie slice and hence narrow down the set of papers that is displayed in a table right underneath the charts. If we click on the "ENG" bar and the "Argumentative Essay" pie slice label, for example, the page automatically updates and shows us only those papers that are argumentative essays written by students in the English department. Of the papers in MICUSP, 65 fall in this group. The table at the center of the screen lists all 65 papers (including their titles, and discipline and paper type labels) and allows users to access the full text of each paper by clicking on the paper ID in the leftmost column.

Figure 1. Overview of the MICUSP Simple Website



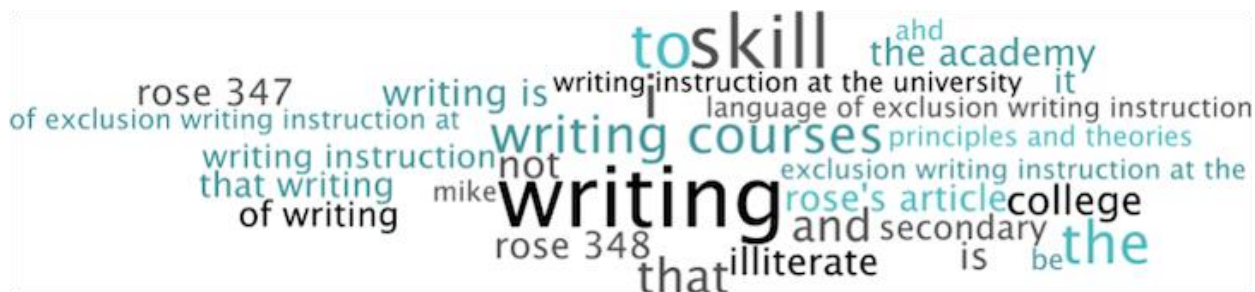
<http://search-micusp.elicorpora.info/>

On the left hand side of the screen, the user finds five groups of selection boxes that provide additional options to filter the set of papers in the corpus. Each of the groups can be hidden or expanded by clicking on the header bar for the feature. The selection boxes for "disciplines" and "paper types" are linked together with the bar and pie charts in the center of the screen, so selections made by interacting with the charts are reflected in the selection boxes and vice versa. In addition to disciplines and paper types, the selection boxes also allow users to filter MICUSP by student levels, nativeness status, and textual features included in the papers. By checking the boxes next to "Senior Undergrad (G0)" and "Native English Speaker", for example, the user can limit the papers that are displayed in the results table to writing samples by final year undergraduate students whose first language is English. With every selection the user makes, the set of MICUSP papers shown on the

page automatically updates, and the status message (in red) at the top of the page changes to reflect the current selection of papers.

Getting back to our browse results for English argumentative essays, we may wish to go beyond just looking at the list of paper IDs and titles given in the results table underneath the bar and pie charts and actually read some of the student papers in this category. As mentioned before, the full text of each MICUSP paper can be accessed if we click on the paper ID in the leftmost column of the table. Clicking on the paper ID "ENG.G0.04.1", for instance, will open up a new browser tab and display a paper entitled "The Absolute Necessity of College-Level Writing Courses". A summary box at the top of the new screen informs us that this particular paper was submitted for an English department course by a female, native speaker, final year undergraduate student, that it was categorized as an argumentative essay, contains definitions and references to sources, and consists of 1,266 words. To the right of the summary box, the user finds a word cloud containing key words and phrases that are particularly frequent in the selected paper compared to all other papers in MICUSP. A single click on the word cloud displays a larger version of it. Word clouds are available for all 829 papers in the corpus. They highlight unusually common expressions in particular texts and hence offer a quick view on what a paper is about. Font sizes of words and phrases indicate how typical certain items are in a paper (in comparison to the rest of the corpus). The word cloud for our selected English essay is displayed in Figure 2. Words and phrases shown in larger fonts, including "writing", "skill", "writing courses", "the academy", "college", and "illiterate", reflect the topic the student discusses in her paper. The word cloud also indicates that the student uses the words "to", "that", "the", "and", and "not" more commonly than her peers. Clearly, these words are less indicative of the topic of the essay but may tell us something about the student's writing style (e.g. use of *that* clauses and *to* infinitives).

Figure 2. Word cloud for MICUSP paper ENG.G0.04.1 "The Absolute Necessity of College-Level Writing Courses"



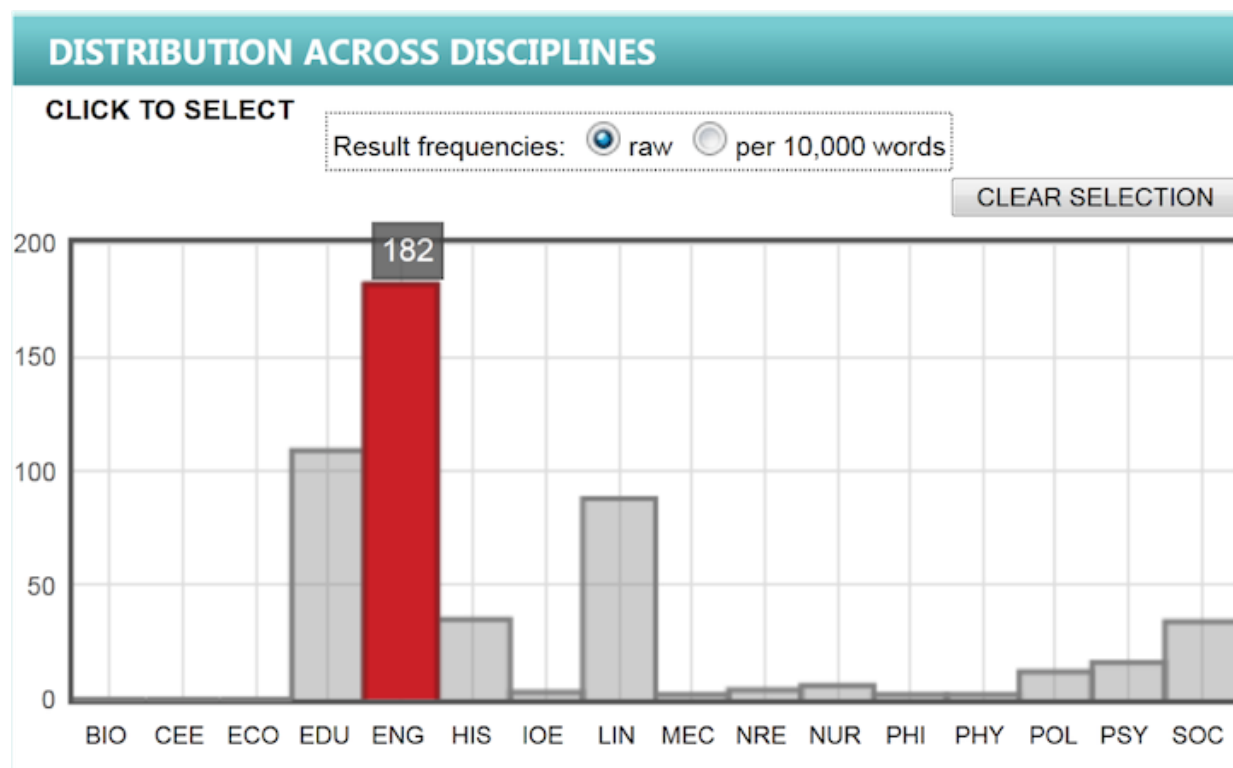
Another feature on the paper view page that we would like to highlight is the "View original paper (PDF)" link in the top right corner. This link allows users to view and download a pdf of the student's original submission in which all identifying information about the student (name, email, student ID) has been removed. The pdf preserves the paper in its original format, including structural elements such as section headings and paragraphs, as well as figures, tables, and formulas. Access to original versions of MICUSP papers may be particularly useful for writing teachers who would like to bring successful writing samples into the classroom in order to discuss issues in text structure and formatting.

In writing classes where the focus is on teaching specific features or communicative functions of an academic text, teachers (and students) may wish to browse MICUSP papers by "textual features" and activate one or more of the relevant selection boxes in the left-hand menu. To give just two quick examples, clicking the checkbox next to "abstract" narrows down the set of papers to only those that

begin with an abstract. Abstracts occur in altogether 100 texts in MICUSP from 12 disciplines and are especially common in Biology, Mechanical Engineering, and Natural Resources and Environment. Once papers with abstracts from the students' target disciplines have been identified, it is very straightforward to retrieve those from MICUSP Simple (just follow the steps described above). Presenting lower level students with a selection of sample abstracts from advanced student papers that have been awarded a high grade may help them learn how abstracts are normally structured and what their central functions or communicative stages are. Either in a self-tutoring, exploratory fashion or with teacher guidance, students can identify phrases that commonly occur in an abstract, look at which tense forms are used, and find out how sentences are connected. A second 'browse' example of pedagogical value would be to identify and analyze MICUSP papers that contain literature review sections. The literature review is a textual component that students across all disciplines are expected to master at some point in their academic careers. In acquiring literature review writing skills, students may benefit from working with samples written by successful peers in their discipline. Such text samples can be easily retrieved from MICUSP Simple with just a few mouse clicks.

In addition to browsing papers, MICUSP Simple allows users to search for words and phrases in the whole corpus or in sets of papers that match the user's selections of disciplines, paper types, student levels, nativeness status, and textual features. A user simply types a word or phrase that s/he is interested in into the search box at the top of the page and clicks the "Search" button to the right. A message right below the search box tells the user how often and in how many MICUSP papers the word or phrase occurs. The bar chart displays the search results by discipline – either in terms of actual occurrences or instances per 10,000 words of text (depending on which of the two radio buttons the user selects). This makes it easy to see which words or phrases belong to a general academic writing repertoire and are found across disciplines, and which ones are more discipline-specific and occur only (or particularly frequently) in a few disciplines. The full results for a word or phrase search are presented in the table below the bar and pie charts. Every instance of the selected search term is given in an entire paragraph of text with the search term prominently highlighted. To illustrate this function with an example, a search for "writing", a key word in the English essay we looked at earlier, retrieves 495 instances in 134 MICUSP papers. The word is used particularly often by students in English, Education, and Linguistics. As Figure 3 shows, 182 of the 495 instances of "writing" come from English papers. The word does not occur or is very rare in many of the natural and social science disciplines, including Biology, Economics, Physics, and Political Science. As with the paper browsing function, it is possible to limit the search results by interacting with the graphs and/or by selecting checkboxes. A click on the ENG bar in the graph, for instance, will result in a display of the 182 examples of "writing" that come from student papers in this discipline.

Figure 3. Distribution of the search term "writing" across disciplines in MICUSP (raw frequency counts)



This brief demo of some of the core functions of the MICUSP Simple website was meant to illustrate how this resource provides writing students (and their instructors) with straightforward access to a range of successful samples from hundreds of peers in multiple disciplines. We consider MICUSP Simple a powerful instrument in the writing classroom that not only functions as a source of model papers of different types, but also as an interactive learning and teaching tool which allows students to explore important features of academic writing in a self-tutoring fashion (in line with the DDL approach described above). In the remainder of this article, we use a case study to describe an approach for teaching discipline-specific writing using MICUSP. This approach uses a collection of authentic student writing as a resource for FYC to explore disciplinary conventions and disciplinary variation in the writing classroom. Such an approach provides appropriate models for students, and it allows students and instructors alike to research the ways that different disciplines construct knowledge through writing.

### Case Study: Teaching a Corpus-Assisted Composition Course

This case study is based on a course taught by the lead author, Jack, at Oxford College, Emory University. The course, a first year requirement for first-year undergraduate students, was called "Critical Reading and Writing". Students in this course had various language backgrounds, language proficiencies, education goals, and professional aspirations. Two of the five sections of the course were designated as "multilingual", for speakers of language backgrounds other than English. The course design, for both the traditional and the multilingual sections, however, were identical. One common thread with the students was that as new college students they were unfamiliar with many



of the literacy practices of the various disciplines they were encountering, some for the first time. In their first or second semesters of college, students were still navigating the expectations of their professors. For example, some of Jack's students expressed frustration over what a professor in one discipline expected from a "research paper" compared to the same label of assignment in a course from another discipline. Because Jack could not teach every practice of every discipline, he instead had the goal to develop the autonomy of those students, helping them learn how to analyze and adjust to writing requirements in future courses and even life outside academia.

The way the syllabus of this course was designed was influenced by English for Academic Purposes (EAP) courses. A general EAP textbook used in this course included sections on various disciplines and genres. Instead of using the readings from the textbook, which was designed for lower-level second language English users, real examples of academic research articles, textbooks, and successful student papers (from MICUSP) were used for students to receive input in the forms of language that are used in those disciplines. Table 1 displays the disciplines that were focused on and the paper types, or genres, that students learned about and were required to produce in the given section.

**Table 1: Course Organization**

<b>Discipline</b>	<b>Paper Type</b>
Psychology	Expository Paragraph
Anatomy	Extended Definition Research Paper
Education	Argumentative Research Essay
Applied Linguistics	2 Research Papers (collecting, analyzing, and reporting on primary data) <ul style="list-style-type: none"> <li>• Contextual Genre Analysis</li> <li>• Textual Genre Analysis</li> </ul>

Jack believes that it is important to explore both the situational context (such as a discipline or a college classroom) as well as how language is used in a given genre (such as a lab report or an argumentative essay). This is especially true for those students who desire to participate in the genres that are used in target discourse communities, such as the discipline-specific writing expected by university faculty members. Thus, throughout the semester, activities were designed to help students investigate the contextual and textual aspects of the disciplines being studied. For example, during the section on Anatomy, there was an activity that introduced grammatical concepts of tense, aspect, modality, and voice as they are used in research articles from Biology, a discipline related to Anatomy. In the Education section, students also learned about qualitative research methods, such as collecting and analyzing artifacts and interviewing.

The last two research papers, a contextual analysis and a textual analysis, that the students completed are the focus of this article. After the first three sections – Psychology, Anatomy, and Education – the

students were given the opportunity to explore the practices of any target discipline they wished. At Oxford College, students do not declare majors until the end of their sophomore year. This activity thus was helpful for those who were starting to think about what field they would be interested in. Students who were torn between two disciplines were able to better understand those areas by comparing them in depth. These research papers were crucially based on primary data collection. In other words, the students gathered and analyzed their own information about the disciplines instead of relying entirely on outside sources. For many students this was the first time they had conducted empirical research. Many had experience writing research papers in their high school English classes and other college courses that were based purely on outside resources or on their own logic.

## Contextual Analysis

The first research paper was a contextual analysis of a discipline or disciplines of the students' choice. Throughout the semester, students learned methods of conducting research to explore context. This was an essential part of the course and needed to occur before the textual analysis. Without an understanding of context, one could claim, an analysis of lexical, grammatical, and organizational features of texts would be much less meaningful. Instead, by understanding the disciplinary cultures that construct and are constructed by academic genres, students gained valuable insight into those texts' communicative purposes and relative importance.

The contextual analysis required that they triangulate data, gathering information from multiple sources in multiple ways. Some of the more common ways that students collected data were:

- collect and analyze artifacts (e.g., degree requirements, course syllabi, assignment sheets, rubrics).
- interview professors
- survey current or former students
- observe teaching practices in the classroom

In addition to their primary research, students also conducted more traditional secondary research. In this stage, students gathered information about job opportunities for graduates in the discipline. Some also were able to find academic articles that included statistics, historical information, and future trends.

The following is a description of a contextual analysis written by Junzhang (Jun) Huo (2011), entitled "Oxford Students: How to Successfully Prepare for the Economics Major at Emory University." Jun used four types of data collection. First, he investigated the website for the Economics Department at the university to better understand the degree requirements, which included required coursework. From there, he collected and familiarized himself with the syllabi from several of those courses. With a firm grasp of what would be required institutionally and with a general idea of how courses are constructed, he then interviewed two Economics professors and several other students who were also prospective Economics majors. Jun compiled the qualities of these courses into a concise table. A portion of his table (Table 2) is included to illustrate the areas that Jun investigated about Economics courses.

**Table 2: Economics course requirements at Oxford College (Jun's contextual analysis)**

Course	Homework	Readings	Writing	Exams
<b>Econ 101 (Principles of Micro-Economics)</b>	Aplia online homework (every week); in-class problem sets	textbook (with reading schedule)	n/a	2 in-term exams; 1 final exam
<b>Econ 112 (Principles of Macro-Economics)</b>	in-class problem sets	textbook (no reading schedule); several online videos; several professional critique articles	4 to 5 writing prompts, assigned by the instructor	2 in-term exams; 1 final exam; several in-class quizzes
<b>Econ 201 (Intermediate Micro-Economics)</b>	Aplia online homework (every week); problem sets and graphic models on Blackboard; presentations of current events related to the course	textbook (no reading schedule)	several writing prompts, assigned by the instructor	2 in-term exams; 1 final exam; several in-class quizzes

Jun was interested in understanding what was required of students in these different courses. For example, he found that in the first two levels of Economics courses (101 and 112), the courses are mostly theoretical and require basic math and analytical skills. From his interviews with students, he found that these courses were mostly difficult because there were many novel concepts. Jun also learned that the higher-level Economics courses are generally taken by those interested in becoming Economics or business majors.

From his interview with a professor, Jun found that Economics 201 (Micro-Economics) used the same materials as its lower-level counterpart (Economics 101), but that students learn from those models to "become labor economists, natural resource economists, and even sports economists in class" (interview). Thus, along with an increased use of calculus in this course, Jun realized that even in those lower level courses, students would be expected to join in the disciplinary discourse and practices of Economics. Also from his interviews with professors, he found that more of the higher-level courses involve increased amounts of reading and writing. The highest-level course that he investigated, Economics 385R, required students to read published research articles. However, the course's written final project was not like the genre that they would read. Instead, students were to write "more verbal and historical" (interview) responses to the topic rather than conduct the type of empirical research they were reading.

## Textual Analysis

For the textual analysis, students were asked to explore the linguistic features and rhetorical practices of their target disciplines. Most students chose to use papers from MICUSP for this task. In order for students to have enough data to predict, analyze, and discuss in this research paper, they were asked to compare two groups of writers. For example, many students wanted to examine the potential differences between undergraduate and graduate student papers. Others investigated undergraduate vs. published writing. Those students who were unsure of the direction they wanted to study compared two disciplines.

The textual analysis (the second research paper) began with the students conducting secondary research. In other words, instead of finding information through interviews and surveys, they gathered information about writing in their respective disciplines from previously published work. For example, students who were interested in Psychology studied the *Publication Manual of the American Psychological Association* (2010) because of its important role in controlling the way that students and professionals in the field write. Other students found books and articles that were written by professionals in the disciplines, applied linguists, and rhetoricians who had written on how to write better. Examples included Biology (Pechenik, 2007), Chemistry (Beall and Trimbur, 1996; Robinson, Stoller, Costanza-Robinson, and Jones, 2008), Economics (Neugeboren, 2005), Philosophy (Graybosch, Scott and Garrison, 2003), and Political Science (Schmidt, 2010). Students read these sources, paying particular attention to any clues about textual conventions or expectations for genres in their focus disciplines. An example of this would be a style guide, such as that of the American Psychological Association, which describes a preference for active voice rather than the passive (2010, pp. 73, 77). Students noted such recommendations to inspire them to ask their own research questions about discipline-specific writing conventions. Many students had also begun to better understand the textual, linguistic, and rhetorical practices in their focus disciplines during their contextual analyses, especially when interviewing professors and analyzing course syllabi. Such understandings were very useful in the subsequent textual investigations, analyses, and conclusions.

After reading literature about disciplinary practices, students then conducted their own empirical investigations. This involved the collection and analysis of authentic texts. Students were required to collect five texts from each of the groups they were interested in (e.g., five Biology graduate student papers). Although each sample was quite small, the purpose was more to develop the genre awareness than to make strong claims about the genre or discipline as a whole.

Jack's students took advantage of the valuable resource MICUSP, which offers well-graded, student-written texts. In their small-scale research project, students were asked to keep all but one variable constant. For example, one student, who was interested in the difference between graduate student writing and professional writing in physics, found empirical physics research papers in MICUSP and compared them to comparable published physics research articles. Such comparisons rely on ensuring what Connor (2004) describes as a *tertia comparationes*. This concept refers to how two groups of writers, in this case of differing academic levels, are minimally different and thus comparable. In other words, students were charged with comparing apples to apples. The minimal variable could have been level, as described above, but other students chose to compare genres within a single discipline. Still others, the students who chose to investigate the contexts of different disciplines, analyzed how texts of the same paper type differed across two disciplines. For example, one student was interested in how "research papers" compared between Biology and Economics.

The textual analysis required students to conduct multiple analyses of their data. Many of the analyses were modeled in class earlier in the semester while studying the practices in Psychology,

Anatomy, and Education. Below, we describe four of these analyses, providing examples from student papers.

One of the first things that a person sees in a paper is the title. Many of Jack's students were not accustomed to titling the papers they wrote for their courses. If a title was included, it was often something like "English Paper" or "Report." Jack used an activity that helped students investigate titles, which was adapted from Swales and Feak's (2004) book *Academic Writing for Graduate Students*. Many students used this activity for their textual analysis research paper. The activity allowed students to examine the small, but important genre of titles as practiced by more advanced students and experts. Many students noticed that compared to their own previous papers, more advanced writers' titles were longer, contained fewer verbs, and often included punctuation such as colons (e.g., "Invading the Territory of Invasives: The Dangers of Biotic Disturbance", an argumentative essay by an undergraduate in Biology). Some students also analyzed what was described by the title (e.g., the methodology, the purpose, or the general topic).

Another popular activity for students was to explore the in-text citation practices of writers. To many of these first year college students, style conventions of citation were completely novel. Some students came into the course familiar with MLA style, but many had never heard of nor were aware of the variety of styles, especially in the natural and social sciences. Some students investigated the use of the authors' names in the actual prose of the genres compared to parenthetical citation. This was a useful practice for many of the students, as they came to realize the overwhelming use of parenthetical citation in most disciplines, which differed from the way that they all had previously been taught to reference outside material in their writing, whether it were MLA, Chicago, or another style.

One student interested in citation practices, Mengran (Jessie) Cui (2011) was curious to know which sections of research papers included the most outside references. According to her contextual research and what she had learned about the structures of research papers in general, the bulk of references are in the introduction sections, where writers include reviews of literature. One might not think the results section would contain many references because it is where writers provide their own findings.

Below is Table 3, showing Jessie's analysis of eight graduate Economics students' research papers from MICUSP (labeled as G1-G8). Jessie noticed that, in fact, many of these graduate students included in-text citations in various sections of their research papers. Notably, she observed large use of citation in methodology and results sections. This was interesting because she had thought of research papers as empirical research papers. However, as Jun found out in his contextual analysis of Economics, students rarely conduct empirical investigations. Therefore, such student-written research papers may be more likely to be systematic reviews of research or mathematical studies of the target concept.

**Table 3: Jessie's Analysis of References in Economics Research Papers by Section**

	Introduction (I)	Methodology (M)	Results (R)	Discussion (D)
G1	20.4%	5.9%	41.2%	32.5%

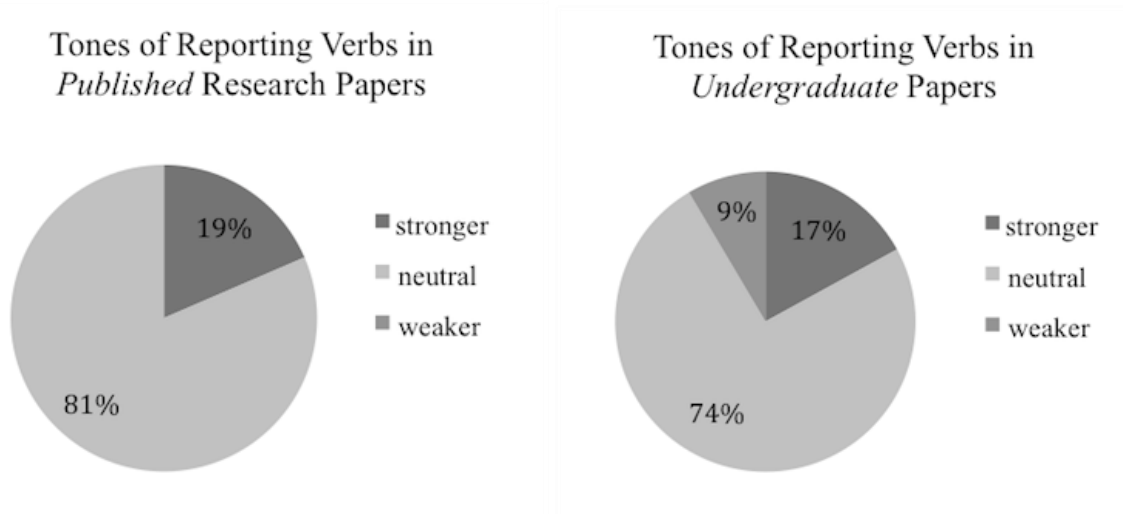
<b>G2</b>	15.8%	15.8%	68.4%	0%
<b>G3</b>	53.2%	6.4%	36.2%	4.2%
<b>G4</b>	55.6%	0%	0%	44.4%
<b>G5</b>	60.7%	21.4%	17.9%	0%
<b>G6</b>	12.5%	72.5%	15%	0%
<b>G7</b>	66.7%	16.7%	0%	16.6%
<b>G8</b>	21.4%	78.6%	0%	0%
<b>Average</b>	37.9%	23.1%	18.4%	8.9%

Jun's textual analysis, "Citation Analysis of Student and Published Economics Research Papers", was also well researched. One of the concepts that interested Jun was reporting verbs. These are the verbs that are used to report, discuss, or evaluate the work or ideas of others (e.g., *describe, show, suggest*). Such verbs have been shown to be important in academic writing by Thompson and Ye (1991) as well as Hyland (1999).

Jun wanted to explore this practice by comparing undergraduate and professional writing in Economics. He felt that such a comparison could show large differences and give potential for ways he could improve his own writing. Marking all of the verbs in his data set, Jun determined which verbs were reporting verbs. He then labeled whether those verbs were in the present or past tense. Jun found that in his undergraduate sample drawn from MICUSP, ninety-eight percent of the reporting verbs were in the present tense. In the published Economics research articles, however, only sixty-nine percent of the reporting verbs were in the present tense. Jun realized that although both levels of writers prefer the present tense when reporting outside information, the professionals were much more likely to also include past tense reporting verbs.

Another question Jun had about reporting verbs was related to their strength, or tone. Jun found a section of our textbook (Swales and Feak, 2004) that listed examples of reporting verbs that were labeled strong, neutral, and weak. These categories refer to the position the cited authors are given relative to their work. For example, some strong reporting verbs include *assert, discount, and promise*. For these strong verbs, the author is shown to hold a strong position. Compare that to more neutral verbs like *feel, think, and explain*. Weaker reporting verbs show that the author may speculate an idea without being entirely certain. Examples of these include *guess, hope, and speculate*. Using a preexisting list from the University of Warwick's Centre for Applied Linguistics (2013), Jun categorized all of the reporting verbs in his data set. Figure 4 shows his findings. Jun noticed that both professional and undergraduate writers most often used neutral reporting verbs to introduce the work of others. However, the way that professional authors described research included none of the weaker, more tentative, verbs.

Figure 4. Jun's Analysis of Reporting Verbs in Economics Research Papers



Finally, another analysis that students conducted focused on the organizational structure of their focus genre. Many textual analyses included descriptions of most frequent subsections. This was made easier by looking at the pdf versions of the texts as provided by MICUSP Simple. Several students noticed variation from the traditional Introduction, Method, Results, Discussion (IMRD) structure that they had learned in the course. They noticed that, depending on their discipline, there might be sections labeled literature review, participants, implications, and conclusions. However, other students, especially those who were investigating the practices of natural science writing, found their samples to be very standardized, in which the conventions were seen to allow little variation, at least at the macro-organizational level. For both groups of students, those who found variability and those who did not, there was a sense of better understanding and genre awareness. As a class, we were able to discuss and try to understand not only the practices but the possible explanations for and ramifications of those conventions.

## Follow-up

One year after teaching this course, Jack wanted to follow up with his former students. Because the course was specifically designed to help students develop their genre awareness for future flexibility and academic success, he wanted to know their thoughts of the course well after having taken it. For that purpose, Jack administered a version of the Classroom Learning Activity Survey (CLAS; see Carter, Mohinani, Brooks, Kurani, and Shin, 2012), using an anonymous online survey tool. Although this survey is designed to measure students' perceptions of a single activity in a course, the questions were adapted to ask students about the style of the course as a whole (see Appendix A). Using a five point Likert scale, students responded to prompts asking about how they perceived the final two research projects.

In general, the respondents (N = 14) enjoyed the course. The average scores for their responses are shown in Table 4. Survey items that scored particularly high were: "the activities gave me an opportunity to interact with others (faculty and/or students)" (4.50); "the activities helped me understand expectations in the discipline I chose to study" (4.64); and "I know more about writing in a particular discipline now than I did before completing the projects" (4.50). Students appear to recognize the pragmatic value of developing their genre awareness and developing skills to adapt to

or question those conventions. It should also be noted, however, that the lowest scoring question was if students found the research interesting (3.86) even though they mostly found the research papers "personally relevant" (4.43). Comparisons with other required FYC course assignments could help understand these responses.

**Table 4: Student evaluation of the course. Survey adapted from Carter et al. (2012)**

Question	Score (5=strongly agree)
The projects were useful.	4.29
The projects helped me learn more about an academic discipline.	4.43
I found the projects relevant to my future academic objectives.	4.43
I think other professors should do this type of activity.	4.29
I found the research interesting.	3.86
I found the research papers personally relevant.	4.43
The research projects were something new.	4.29
These activities gave me an opportunity to interact with others (faculty and/or students).	4.50
These projects were good uses of my time.	4.36
I enjoyed these projects.	4.00
The projects helped me understand expectations in the discipline(s) I chose to study.	4.64
I know more about writing in a particular discipline now than I did before completing the projects.	4.50

The survey also included an optional space for respondents to provide more qualitative feedback about the course. Below are some excerpts from students, whose identities were kept anonymous in the survey.

My whole high school life, my English classes were all the same: ... read a certain book, discuss it, then take a quiz or take an in class essay exam for it. What I really enjoyed from this class was how it actually felt like a college-level course. I didn't feel like just an average English student, but I felt like a researcher and a scholar.



I had my Chemistry lab report and group presentation, History research essay, and Math paper this semester. And everything just looks familiar because I have done that in Eng 185 before!

I took away a better understanding of formal, academic writing and am more confident in doing research.

I found it useful that the class was separated into sections of certain types of papers. I like that we were given the choice of subject area so we can apply it to other areas outside of English. I plan on using the skills to write research papers.

Based on the quantitative and qualitative results of the survey as well as conversations with students at the end of the semester, the first author, who was the instructor of the course, noticed that there was a sense of empowerment using this method of teaching composition. Students saw immediate benefits in their concurrent and subsequent coursework. MICUSP offered a fun and engaging tool for students to find and analyze texts that were more like the ones they were expected to produce than those they usually encountered.

## Conclusions

Some of the challenges to teaching disciplinary practices in a heterogeneous reading and writing class include instructors not being familiar with every discipline and the inability to cover all the relevant disciplines that students want to pursue. Johns (1997) and colleagues at San Diego State University have pioneered and championed a system of helping students build awareness of disciplinary genre practices through composition courses that focus on single disciplines. As described in our study, such an approach can also be applied to a multi-disciplinary setting in which students are autonomous in exploring disciplinary texts as well as the contexts in which they are written.

This approach to writing instruction may be criticized for students only having written research papers in a single tradition (applied linguistics). However, just as we would not expect a professional scholar to conduct a given study under multiple paradigms, it is not reasonable to expect first-year composition students to conduct individual research studies under multiple paradigms. Instead, we would argue that students in this model are not only writing a real research paper for an actual scholarly audience, but in doing so, they are also becoming more aware of the writing practices in other disciplines. Thus, students can apply what they have found in any number of ways of both writing and analyzing new genres and audiences they encounter.

In addition to enabling students to become familiarized with the writing conventions of target disciplines, student autonomy was also greatly facilitated by MICUSP, which offered easy access to a wide range of samples of successful student writing. Jack and his students found MICUSP to be a helpful resource to explore a range of different types of papers from different disciplines and student groups. In fact, students enjoyed examining multiple types of written discourse used by those communities. They also appreciated the user-friendly corpus search interface, which offered them authentic sources for instruction, discussion, and analysis. Students reported having benefited from the heightened awareness and understanding of disciplinary differences that they gained through working with the corpus materials.

In this article we have described the benefits of giving beginning student writers access to real-life writing samples from successful higher-level peers. We believe that these samples represent relevant

models ready for analysis that help create an environment of authentic practice in the disciplines and have a positive effect on students' writing development. With the help of a corpus like MICUSP, it was possible to equip students with appropriate tools for learning that go beyond a particular writing task or course and to turn them into explorers of the disciplines they wish to be a member of.

Our case study has reinforced our belief in the abilities of and benefits to students to have scaffolded interactions with authentic model texts and corpus-based tools. As has been shown in a range of language learning contexts (see Boulton, 2009; Flowerdew, 2012; Römer, 2011), corpora offer concrete examples for students to explore. We believe that first year composition courses can also benefit from such corpora, especially disciplinary corpora like MICUSP. By examining multiple texts, students can begin to see variation within and across disciplinary communities and genres, in addition to being able to access individual examples of successful student writing. We feel that awareness-raising activities like those described in our case study can be applied in various ways and degrees in heterogeneous, low-level literacy courses: in grammatical analyses, rhetorical move studies, and even critical discourse analysis. Finally, by integrating authentic, student-written material into a course, instructors and students can come to better understandings of expectations and possibilities of potential genres and contexts they will be expected to participate in.

## Appendix A - Online Questionnaire

1. What did you take from our English 185 class overall?
2. Please think back to our final two writing projects (contextual and textual analyses). To what extent do you agree or disagree with the following statements?

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
The projects were useful.					
The projects helped me learn more about an academic discipline.					
I found the projects relevant to my future academic objectives.					
I think other professors should do this type of activity.					
I found the research interesting.					
I found the research papers personally relevant.					

The research projects were something new.					
These activities gave me an opportunity to interact with others (faculty and/or students).					
These projects were good uses of my time.					
I enjoyed these projects.					
The projects helped me understand expectations in the discipline(s) I chose to study.					
I know more about writing in a particular discipline now than I did before completing the projects.					

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## Contact Information

Jack A. Hardy  
Program in Linguistics  
Emory University  
532 Kilgo Circle, Suite 202C  
Atlanta, GA 30322  
Email: [jack.hardy@emory.edu](mailto:jack.hardy@emory.edu)  
Phone: (404) 727-7904

Ute Römer  
Department of Applied Linguistics and ESL  
Georgia State University  
25 Park Place, Suite 1500  
Atlanta, GA 30303  
Email: [uroemer@gsu.edu](mailto:uroemer@gsu.edu)

Audrey Roberson  
Department of Applied Linguistics and ESL  
Georgia State University  
25 Park Place, Suite 1500  
Atlanta, GA 30303  
Email: [audreyroberson@gmail.com](mailto:audreyroberson@gmail.com)

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