

## **Preparing UC Berkeley Undergraduate Economics Students to Become Writer-Practitioners: Must More Be Done?**

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### **ABSTRACT**

In light of the changing values of economic research and the comparatively unchanging values of economic pedagogy, it is possible that undergraduate economics courses are underpreparing students to write research papers, which can develop their reputations and offer them financial rewards as practitioners. Focusing my study on the undergraduate economics program at the University of California, Berkeley, I determine the extent to which undergraduate economics classes at the university prepare students to write research papers. Utilizing a comparative analysis of the writing conventions and clarity of 15 honors student thesis papers and 15 economics practitioner papers, I find evidence that honors students write similarly enough to practitioners of economics. The main difference of note is that a higher proportion of students erroneously used quotations, rather than paraphrasing, in comparison to practitioners. Nevertheless, such a difference is minute and easily fixable. With that said, the undergraduate courses teaching these students to write appear to be higher division courses, so I can only conclude that undergraduate economics courses tailored to honors students in particular are preparing them quite well to write research papers.

Keywords: Clarity, conventions, economics, practitioner, research.

### **Introduction**

The field of economics is changing. The increasing integration of modern technology in economics work has fundamentally altered the practices of the discipline. Nowhere is this more apparent than in economics research, where modern developments have changed the methodology with which economists collect data. For example, whereas before economics research assumed people to all be “rational” when making decisions, today it “involves more emphasis on studying how real people behave rather than on studying how infinitely rational people behave” (Colander, 2005). Furthermore, while empirical work before tested generalized economic theories, today’s empirical work “is more often than not a search for patterns in data” (Colander, 2005).

These changes in the discipline, while radical in the field, have done little to alter the ways in which undergraduate courses teach students to conduct economic research. While it is true that “any single course in economics never seems sufficient to pull together all the aspects that would allow for a good demonstration of its full capability” (Davidson and Gumnior, 1993), “today what economists teach has a more nuanced relation to what they do” (Colander 2005). The reason for this change is simple: “the economics profession and the textbooks have evolved differently” (Colander, 2005).

This difference in the evolution of economics research is not necessarily ominous for the futures of undergraduate students. In fact, “what economics instructors currently teach is extremely valuable to students” (Colander, 2005). After all, “Maintaining compatibility between what economists teach and what they do is not a requirement of good teaching in economics” (Colander, 2005). As inconsequential as this difference between what is taught in class and what

is done in the field may be in economic pedagogy, it may actually be harmful with regards to producing an economics research paper,

An economics research paper, being the ultimate product of research, is arguably more important than the research itself. In the context of the economics discipline, in fact, “writing is clearly preeminent among all the possible activities of an economist in establishing his status and therefore in determining his rewards” (Morin, 1966). In addition to developing the reputation of an economist, an exemplary research paper will bring with it financial benefits as well. These benefits are made substantial by estimates such as “Professor George Stigler’s estimate that a major article in a major economics journal is worth to its author between \$10,000 and \$20,000 in increased lifetime earnings” (Morin, 1966). Even with the benefits a research paper provides, some undergraduate university courses, in focusing on the research process, tend to emphasize the process over the product. Unfortunately, this “emphasis on research as the real work seems to imply that writing is indeed secondary and serves only as an advanced form of note recording” (Davidson & Gunnior, 1993). By relegating research paper writing as a secondary and thus less important component of research, undergraduate economics courses may be inadequately teaching students to write such papers and thus underpreparing them to produce the very products that will earn them reputational and financial success as practitioners.

The goal of my research is to determine how these concerns over undergraduate economics research papers apply to UC Berkeley, a university renowned for its undergraduate economics program. Therefore, I ask the question: to what extent are undergraduate economics classes at UC Berkeley preparing students to write economics research papers?

### **Methodology**

In order to answer my research question, I initially planned to survey economics undergraduate courses, and compare the papers students produce in these courses to practitioner papers, finding rather quickly that the students did not actually produce research papers in. So, I instead studied the fifteen undergraduate economics honors theses, submitted in spring 2017, that were available online (see Appendix 1). This was beneficial for two reasons. First, as the papers were easily accessible, it was a practical way to look at the writing products undergraduate economics students produce. Second, I could compare actual student research papers to their professionally produced counterparts in the field to find and analyze the severity of disparities between student and practitioner writing.

In order to make such a comparison, I chose 15 economics papers published in 15 reputable economics journals (see Appendix 1) to match the 15 honors theses I had available. I split my comparison into two sections: writing conventions and clarity. Economic writing conventions provide insight into disciplinary values and the extent to which both student and practitioner research papers adhere to these values, and writing clarity provides insight into the writing styles and simplicity of student and practitioner papers.

To analyze conventions, I used the Duke University guide *Writing in Economics* to create a checklist of 10 conventional features that an economics paper usually has (see Appendix 2). I determined which conventions were present in the papers and tabulated the data (see Data: Writing Conventions).

Because writing clarity is contingent upon the target audience, which can differentiate between writers, I focused on syllables, characters, and word length to obtain a more general analysis of clarity. My inspiration for a syllabic analysis came from Walter Salant's study of economic writing, *Writing and Reading in Economics*, in which he criticized economists for not writing clearly (Salant, 1969). In order to substantiate this claim, he compared the syllable lengths of the writings of three prevalent economists at the time to that of Ernest Hemingway's *A Moveable Feast* (see Appendix 3), finding that the economists used syllabically longer words than Hemingway, an author whose writing he considered to be exceptionally clear (Salant, 1969).

I conducted a similar study of syllables, determining the proportions of words having one syllable, two syllables, three syllables, and four or more syllables for both the 15 student papers and 15 practitioner papers. I then compared the papers in terms of both number of characters and average word length (in letters). I tabulated the averages for both student and practitioner papers (see Data: Clarity of Writing). Due to time constraints, I only used, as Salant did, excerpts of 100 words from the papers, specifically using the first 100 words from each. I used three rules in my analysis. First, only writing content (no titles or headings) counted as part of the first 100 words. Second, words separated by a hyphen counted as a single word. Third, periods, commas, colons, and semicolons counted as characters but not letters, meaning that I would disregard them from passages when determining average word length.

Finally, in order to better determine the pedagogical connections between the undergraduate economics courses and the student papers, I conducted a survey (see Appendices 4 and 5) of the student writers by email, receiving two responses. My survey questions functioned to determine both the source of student knowledge about writing an economics research paper and the extent to which the economics classes these students took prepared them to write their papers.

### **Limitations**

My methodology, in establishing a comparative analysis of particular aspects of student and practitioner research papers, sacrifices more holistic evaluations. My data on writing conventions, for example, only includes 10 conventions when there are more available for comparison. Also, because I only looked at the first 100 words of each paper in my analysis of writing clarity, my conclusions from this section are limited to the abstracts and/or introductions of economic research papers. Another thing of note is that more ways to evaluate writing quality exist than the quantitative methods I chose. In terms of the survey, one respondent was not reachable through email, and I only received two responses. Because the students are now graduates, I had no other way of contacting them and thus could only utilize this limited set of responses. Student ratings of the extent to which economics classes taught them to write like practitioners (see Appendices 4 and 5) are admittedly arbitrary, and the students, entrenched in work or graduate school, may not remember fully the classes that were most beneficial. There also is possibly a lack of representation. The student writers may not be representative of the undergraduate economics students as a whole, and the practitioners may not be representative of economists as a whole. Most significantly, because only examples of honors student papers exist, my results are limited to such advanced students (I discuss this further in the conclusion). Finally, I was unable to access journal articles from the *Journal of Political Economy* (University

of Chicago Press) and the Journal of Labor Economics (University of Chicago Press) and thus did not select practitioner papers from these two reputable journals.

Nevertheless, my data serves to give a first look into disparities between student and practitioner economic writers and determine if these disparities are significant. For this reason, my methods, I believe, adequately meet requirements for an introductory study. For the next steps I believe subsequent studies can take to further my initial findings, see the Future Studies section of my conclusion.

## Data

### *Writing Conventions*

I first present my comparative analysis of the writing conventions used in student and practitioner economics research papers. As aforementioned, I used the Duke University guide *Writing in Economics* to discern 10 common conventions of writing in the economics discipline. I then determined which conventions appeared in each of the 30 student and practitioner papers and tabulated the data. I split data between empirical and theoretical papers, the two types of economics papers. Empirical papers “run data through a model (a series of mathematical equations)”, while theoretical papers “begin with a model based on certain premises and then prove that certain outcomes will ensue” (*Writing in economics*: Thompson Writing Program, Duke University, n.d.). This is a crucial distinction to make because empirical papers must then provide and explain the source of data they use (another convention I analyzed), and theoretical papers, which do not use actual data, instead test models with mathematical operations. Fortunately, both the student papers and practitioner papers I analyzed included examples of both empirical and theoretical papers, even though the ratios of empirical to theoretical papers differed (12 empirical and 3 theoretical student papers, and 9 empirical and 6 theoretical practitioner papers).

I now must discuss, for contextualization, the conventions I chose and why they are important in economics research papers. The first convention was the abstract, which, although used in research papers across the disciplines, serves in economics to help the reader determine not only the goal and results of the paper, but whether the paper is an empirical or a theoretical paper. The second convention was subheadings, which typically transition to different sections of research papers and provide introductions to different sections of data and models in economics research papers. The third convention was a literature review. In economics papers, a literature review explains the research that has already been done on a topic and typically describes “the aspects of the literature that are most relevant to your [the researcher’s] study” (*Writing in economics*: Thompson Writing Program, Duke University, n.d.). The fourth convention was a description of the sections to be included in the paper, included in at least one of two ways: a table of contents and/or an explicit paragraph. The fifth convention was a “point first” introduction, which relays the results of the research from the beginning. The sixth convention is a lack of quotations, which rarely are present in economics papers because economists tend to paraphrase information from other sources. I considered quotation marks not taken from outside sources, which typically indicated a specific term, as not violating this convention. The seventh, eighth, and ninth conventions are the points of views usable in economics research papers, which are first person singular, first person plural, and third person, respectively. The final convention was the citation style, which is the APA (the author’s last name and date in a parenthetical

citation) style. Many papers presented the authors name before citing work and then only included the date in a parenthetical citation, which is an acceptable form of citing APA. My data is as follows:

Data Table: Writing Conventions

	Empirical Student Paper Proportion	Empirical Practitioner Paper Proportion	Theoretical Student Paper Proportion	Theoretical Practitioner Paper Proportion
Abstract	11/12	8/9	3/3	6/6
Subheadings	12/12	9/9	3/3	5/6
Literature Review	12/12	9/9	3/3	6/6
Description of Sections	6/12	9/9	3/3	4/6
Point First	11/12	9/9	3/3	5/6
Data Section	10/12	9/9	N/A	N/A
Quotations Not Present	6/12	7/9	2/3	6/6
First Person Singular	4/12	1/9	1/3	1/6
First Person Plural	3/12	8/9	2/3	5/6
Third Person	5/12	0/9	0/3	0/6
APA Citation Style	10/12	9/9	2/3	6/6

### *Writing Conventions Discussion*

From the standpoint of writing conventions, there appear to be only minimal disparities between the economic and practitioner research papers. The only notable disparities were in three conventions: section description, quotations not present, and third person point of view.

Only half of the 12 empirical student papers included a description of sections while all of the 9 empirical practitioner papers did so. However, it must be noted that the convention in question is actually one I simply noticed by reading papers and was not listed as typical by the Duke University article I used to create my convention checklist. Therefore, the inclusion of this convention could simply be down to author choice.

The main disparity I found was that half of the 12 empirical student papers included direct quotes from outside sources. By contrast, only 2 out of the 9, about 22 percent, of the empirical practitioner papers included direct quotes. From this, it appears that student writers either do not know of or forget about this convention. After all, typical writing courses emphasize direct quotations as excellent sources of evidence. Most, but not all, of the practitioners refrained from using quotations, providing evidence of a conventional difference between student and professional economic writers.

Another interesting finding of note was that none of the empirical practitioner papers and theoretical papers chose to present in third person perspective, instead choosing primarily to present in the first person plural perspective. The perspective, like the inclusion of research

sections, could well be the choice of the author, and none of the papers chose a perspective different from the three conventional ones.

Overall, beyond a slight difference in quotation usage, and differences in what likely is down to writer choice, I found no significant difference between students and practitioners in the usage of conventions in research papers. Evidentially, the honors students tend to know of and apply the correct conventions.

### *Writing Clarity*

I now present my data on writing clarity. I split this data between the 15 economist papers and 15 student papers for a comparison of syllables, characters, and letters per word. Note that, this time, I did not distinguish between empirical papers and theoretical papers, as writing clarity should not change between the two types. I must reiterate that my data only concerns the first 100 words, barring titles and headings, of each research paper. My data is as follows:

Data Table: Writing Clarity

Average	Percentage of Words Having One Syllable	Percentage of Words Having Two Syllables	Percentage of Words Having Three Syllables	Percentage of Words Having Four or More Syllables	Characters Per 100 Words	Letters Per Word
Economist Average	48.2	24.4	12.2	14.1	674.6	6.63
Student Average	54.6	22.3	13.3	9.7	589.4	5.05

### *Writing Clarity Discussion*

In terms of writing clarity, the student writers interestingly appear to be substantially less wordy than the practitioners. Whereas 48.2 percent of the first 100 words of economist papers were a single syllable, 54.6 percent of the student papers, a 6.4 percent increase, were. While differences in percentages of words having two or three syllables were negligible, the economists tended to use more words that were four or more syllables long (4.4 percent more). Furthermore, the economists used about 85.2 more characters and 1.58 more letters per 100 words than the students did. Thus, in terms of both characters and letters per word, the economist research papers, on average, appear to be significantly wordier. Why this appears to be the case is unclear. It could be that economists tackle more complex topics that require more specific terminology, which tends to be longer in terms of both syllables and characters, than do students. It could be that economists, as Walter Salant argued, are excessively wordy. Regardless, I have no evidence to support the claim that the students are any less clear than economists.

### *Survey*

As aforementioned, only 2 out of the 14 students emailed responded to my survey. Nonetheless, the two who did respond, Hengyu Kuang and Michael Wei, provided thorough, in-depth responses that offered a glimpse into the economics courses at UC Berkeley. I've attached their responses as appendices (see Appendices 5 and 6) but will proceed to summarize their responses here.

According to Michael Wei, only Honors Economics 195A, a prerequisite course for honors economics students, taught him to write economics research papers. However, he learned to write “Mostly by looking at online examples” and by getting “guidance from [his] advisor” (Wei 2017). He did not name any conventions, and said that, on a scale of 1-10, the emphasis that his economics classes placed on writing research papers was a 2.

Unlike Wei, Hengyu Kuang indicated Economics 191 (Topics in Economic Research) as the class that taught him to write an economics research paper. He did name seven conventions that, as he acknowledged, applied to empirical papers: abstract, introduction and literature review, model explanation, data, model calibration, results/findings, and discussion/conclusion. According to Kuang, on a scale of 1-10, the emphasis that his economics classes placed on writing research papers was a 10, as Econ 191 is specifically “designed for writing a standard academic paper”, meaning that “this course may be the strongest among econ courses [in the writing aspect]” (Kuang 1).

As a whole, my respondents had differing experiences with the undergraduate courses. Wei believed that the undergraduate courses did not prepare him well and ended up looking online at examples and gaining assistance from his advisor, while Kuang regarded the Economics 191 class as adequate preparation for economics majors. The classes Wei and Kuang regarded as most helpful, Honors Economics 195A and Economics 191 respectively, were advanced courses, meaning that I have no evidence that the average, non honors undergraduate economics student has any course preparation to write research papers. Thus, a divide between honors and non-honors students has been created that I cannot, on account of my evidence, reconcile.

### **General Discussion**

My evidence leads me to believe that undergraduate courses do prepare *honors* students to write economics research papers to a substantial extent, but I do not have evidence that this substantiality applies to regular, *non-honors* students. This is in part due to my methodology. Because I focused on a comparison of research papers, I could only obtain data from honors students, who actually write such papers. The only difference of note between the papers I did analyze was that some student writers of empirical papers erroneously used quotations when integrating outside sources into literature reviews. In terms of writing clarity, no significant difference was noticeable between the practitioners and student writers. If anything, the students were less wordy, on average, than their professional counterparts. The two respondents to my survey recognized two upper division courses, courses that are only required of students planning to write an honors thesis, as courses that taught them to write research papers like practitioners.

### **Conclusion**

Thus, it appears that honors students are being prepared, at least to some extent, to write like economists and subsequently produce papers similar in both convention and clarity to their professional counterparts. Whether they take a class like Economics 191 or learn to write with the help of advisors and examples, it appears that the papers that they do produce are adequately similar to those of practitioners. Overall, these honors students, in having determination, were able to derive the resources they needed from UC Berkeley or otherwise to write conventionally and stylistically acceptable research papers. With gumption came success.

### *Future Studies*

With that said, non-honors students may still be underprepared to write as practitioners of economics, which raises concerns for their future success. I have no evidence that *these* students are taking classes that do prepare them to write like practitioners. Obviously, a study of these students is very much in order. Such a study would look into the lower level prerequisite courses, with the main challenge being, as I discovered, that it is nearly impossible to compare non-honors student papers to practitioner ones simply because, based on what I found, it appears that these students are not required to write such papers. Intuitively, if these students do not write research papers, chances are that they are not learning how to write them. With that said, the fact that students, albeit honors students, at UC Berkeley were able to write successfully provides hope for all the undergraduate students who wish to be able to develop this worthwhile skill. Even if the courses they are taking are not preparing them, they, like Michael Wei, can take initiative and talk to their advisors while also looking at practitioner papers to discern the conventions and ways of writing themselves. Those that do not try to learn themselves, if they do end up writing research papers, may end up gaining the skills in the field after graduation.

To conclude, honors undergraduate students appear well prepared to write proper economics research papers, but I cannot, unfortunately, say the same for their non-honors peers. The simple fact that these students do not have to write term papers could well mean that they are not being prepared to do so in the future. Therefore, it could be that the undergraduate courses teach content first and reserve writing for higher levels, but another study is necessary to fully conclude the matter.



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