
DEVELOPING STUDENT WRITERS IN ECONOMICS: A PROCESS WRITING APPROACH

Craig M. Sasse, Rockhurst University
Laura E. Fitzpatrick, Rockhurst University

ABSTRACT

An intervention developed by the authors that allows inclusion of process writing with peer review was adopted in introductory economics courses. The writing protocol, which took class time to implement, resulted in similar test performance by students without creating excessive demands upon the instructor's time. The process writing intervention, used for essay exams, promotes writing to learn by forcing students to reflect on course content through the peer review process incorporated into the technique. The intervention also addresses writing development by forcing students to critique key writing elements in other students' essays and by encouraging students to revise their written drafts in order to improve.

The structure, style and mechanics of the first draft. The intervention was expected to produce several outcomes. First, the writing process assignments would not detract from content learning. Secondly, students would perceive the activity to be beneficial in terms of their content learning and writing skill. Finally, students would show improvement in their writing and critical thinking skills. Outcomes were assessed with student surveys, analysis of test scores before and after the intervention, and analysis of student papers.

INTRODUCTION

The ability to write and speak well has become a primary concern of employers (Ashbaugh, 1994; Buckley et al., 1989; Porter & McKibbin, 1988). In fact, research conducted in work settings has suggested that content courses (e.g., economics, math, etc.) should emphasize the importance of writing skills (Anderson, 1985). Such concerns have renewed efforts by colleges to implement writing across

the curriculum where writing development is not just the responsibility of the English department, but of other disciplines as well. In short, non-English courses often attempt to develop writing skills of students and/or use writing as a medium for learning about a discipline such as economics.

While many advocate an across the curriculum approach to help students develop writing skills, merely assigning writing assignments is insufficient to meet this goal (Ferrara, 1983; Hansen, 1993). Such development requires students to revise their work and to receive feedback on their writing (Hansen 1993; Cohen & Spencer, 1993). This places a demand on the teacher not only in time taken away from other classroom activities but also being able to comment competently on student papers.

Writing is not solely a subject about itself but a tool of learning (Emig, 1994; Hansen, 1993). Thus, writing assignments within the disciplines serve the added purpose of helping students think in the context of the discipline. By reasoning through content issues and problems in the process of writing, the student is able to learn and reinforce the content or discipline-based knowledge gained. Furthermore, in many professional disciplines, students must learn accepted writing styles, formats, and conventions consistent with the skills and knowledge of the profession.

These two issues-the need to develop written communication skills and the use of writing as a tool for learning-provide a rationale for incorporating written assignments into other disciplines not only for the learning of specific material, but also in developing an important student skill. We developed a process writing protocol that attempts to develop written communication skills through a structured revision process. This article describes the process writing protocol, adapted for essay responses, as implemented in an introductory macroeconomics course. In addition, we will share our assessment of the process writing protocol.

PROCESS WRITING APPROACH

Research has identified several key processes of good writing. First, expert writers are able to plan their writing better than novice writers (Berkenkotter, 1982). This has led Berkenkotter (1982) and others (e.g., Haynes, 1978) to suggest that students be given opportunities to engage in explicit pre-writing activities. The typical essay exam context, however, calls for the student to write a one-draft only response in a time-limit situation. A process writing approach allows time for students to think about the subject and to make revisions to their initial thoughts.

A second important process of good writing is that it is done recursively. That is, the writer must usually go back and forth between putting thoughts together (composing) and re-reading and re-writing those thoughts (revising). Cohen and Spencer (1993) identify revision as a critical process because it gives the writer a chance to organize and style the message so it is readable for the audience. In short, good writing requires a complex coordination between planning, drafting, and revising thoughts and ideas.

In addition to giving student writers more time to compose, reflect, and revise their thoughts, process writing allows for collaboration. Haynes (1978) suggests that an important prewriting activity is peer collaboration. One advantage of collaboration Haynes (1978) asserts is that it provides better opportunities for student-directed revision. Using a process writing approach-where students are given adequate time to plan, draft, and revise and edit their work-also allows the instructor to focus more on the structure and style of the essay, rather than just the grammar or copy-editing.

Copy-editing errors, very common in most student writing, is a final step in the writing process. While teachers often over emphasize copy-editing issues in their feedback (as opposed to the more substantive structure and style issues), a writing process framework must address grammar and punctuation (see Haswell, 1983). Often errors are the result of inadequate proofing and students must develop the attitude of simply taking the time to edit their work. What Haswell (1983) found was that if students were simply cued as to where surface errors might be (by putting check marks in the margin of the line where the error occurs) they could correct many of their own mistakes. Not only does the check system, called minimal marking, help students learn the mechanics, but it also helps focus instructor feedback on the more substantive aspects of the written work.

Although a process writing approach can be used with a variety of forms and in any discipline, the specific protocol described herein was used for essay questions associated with the course exams in a macroeconomics course. The next section describes the writing assignment protocol fully.

THE PROCESS WRITING PROTOCOL FOR ESSAY EXAMS

The new process writing protocol changed the previous procedure calling for the student to write a one-draft only response in a time-limit situation to one where students planned, drafted, and revised and edited their essays over a two-week period (four classes). The course also employed permanent groups, which were

used to support the protocol. These permanent groups also took part in other group activities not related to the essays.

Session One. Two weeks before the assigned exam date, the instructor distributes a list of four or five essay questions to each writing group; group members decide who will prepare which essay response. Before session two, each student drafts a one page or less (typed) answer to his or her assigned question. This essay as well as copies for each member of the group and the instructor is brought to the next class session (session two). Class time required: five minutes.

Session Two. Students bring enough copies of their essay responses to distribute to each of the other group members and to the instructor. The instructor does not evaluate the essays, but does track whether students have completed this step. The instructor can choose to deduct points from the total exam score if it is not completed.

Outside of class and before the next session, students in the group are responsible for reading and preparing a critique of each team member's essay using the peer evaluation form provided by the instructor. (See Appendix A for the peer evaluation checklist.) This critique is structured around four principles: 1) the essay response includes all of the economic content required to answer the question; 2) the response is well organized and readable; 3) the assertions made by the author are supported; and 4) the writing style is acceptable. If time permits, the instructor as an option can spend time (15-25 minutes) demonstrating the writing principles students will be critiquing. For example, the instructor might model a comment for a paper that has problems with organization. In any case, the instructor will likely find that she will need to intervene at some point in the semester to help students make better comments. Class time required: three to five minutes; more time if some kind of support intervention used.

Session Three. Approximately one-half hour of this class period is set aside for the groups to discuss the essays they have critiqued. (Students generally spend five to seven minutes per essay.) Groups may approach this task in several ways, but we suggest students collectively reexamine one essay at a time to suggest areas for improvement using the evaluation form as a guide. As the evaluation form focuses student critique on addressing structure, support, and style problems in the essays, these areas and not copy-editing become the focus of these discussions. This is also the time for students to reassess the content of each essay because this material mirrors that found on the objective part of the exam. During this time, the instructor floats among the groups answering questions regarding the writing components of their essay and, perhaps, providing input on the group's process. The

instructor should not, however, take the critiquing task away from the students. The authors of the essays consider the critiques presented by their fellow group members to make final revisions of their essays so that a final draft can be turned in for session four. In short, this is an intervention that should lead to reflection in terms of content and the way it is presented in writing. Classtime required: thirty minutes.

Session Four. The students bring the final drafts of their essays to class and turn them in to the instructor with the peer evaluation forms from their group members. Evaluation forms are turned in so that the instructor can monitor whether each student is constructively critiquing fellow students' papers. Students are instructed that merely indicating on the peer review form that everything is acceptable does not qualify as constructive criticism. If a student has approached the assignment in this way, seeing each student's critiques allows the instructor to intervene.

The students then sit for the objective portion of the exam. During this time the essays are "quick corrected" by the instructor and other aides. That is, checkmarks are made on the margin next to the lines in which surface or copy-editing errors (i.e. spelling, punctuation, word choice, and grammar) occur (adapted from Haswell 1983). After completing the multiple-choice portion of the exam, students have one last chance to edit their paper using the checkmarks as a guide. These last corrections are completed during the exam period and turned in immediately afterward. When these essays are graded, points are partially awarded on content and partially awarded on writing quality. Class time required: thirty minutes concurrent with the objective part of the exam.

RESULTS OF THE ESSAY PROTOCOL

The assessment of the essay protocol focused on two points of interest. First we were interested in what impact, if any, the protocol had on student performance and student learning for the economic concepts taught in the course. Specifically, did student scores change when the new testing protocol was used and did students perceive that the essay assignment-presumably requiring much more time out of class for composition and revision-was a burden on their ability to study for the other parts of the exam? The second point of interest was a faculty development issue of determining the developmental needs of students in terms of their thinking and writing well within the economics discipline. That is, we needed to learn where students needed help in their thinking and their writing.

Although no experimental designs were attempted, several actions were taken to help us address these issues. First, scores from the objective portions of the exams were compiled from previous semesters (when essays were simply composed in-class during the exam) and compared to those using the process writing protocol. Secondly, an end-of-the semester survey was administered to find out how students perceived the process writing protocol in terms of its impact on their thinking and writing as well as how it impacted their study. Finally, student essays were analyzed to determine any patterns of student errors in mechanics. The analysis looked at changes over the course of the semester and at the specific grammatical and punctuation errors being made in the papers.

From our data, it appears that the protocol assignment had no negative impact on overall student learning of the economics content. In comparing student performance on the objective portion of the exams (multiple-choice questions) we found virtually no difference between scores before the protocol and after. The multiple choice questions, varying in difficulty from definitional/identification questions to complex application questions, were similar to ones used in the instructor's previous macroeconomics courses (pre-intervention), thus serving as a basis for comparison. In comparison of pre-intervention sections (N=138) and post-intervention sections (N=139), percentage of correct answers was nearly identical for all four course exams.

In an end-of-the-course survey, students reported their perceptions of how the process writing protocol affected their learning of concepts and the impact on writing skills. A majority of students reported that the protocol helped them study for exams (77%); likewise, a majority reported that the protocol helped their learning of the content (88%). Only 14 students (11%) reported the protocol took time away from their study preparation for the tests.

After the new protocol had been used for two semesters, a peer review guide (see Appendix A for copy) was added for the subsequent third semester to improve student feedback. Further analysis comparing pre-guide vs. post-guide shows the post intervention group having a slightly lower regard for the protocol's affect on student preparation. That is, when the peer review guide was introduced into the protocol, slightly more students reported that the process took time away from learning. Table 1 compares the pre and post peer review guide perceptions.

Table 1: Comparison between Pre-Study Guide and Post-Study Guide Student Perceptions

Perception Factor	Pre-Study Guide (N=80)	Post-Study Guide (N=44)	Post-Study Guide Difference
Helped Study	82.6%	68.2%	(16.4%)
Took Time Away From Study	5.0%	22.8%	(17.8%)
Helped Learning	92.5%	77.2%	(15.3%)
Took Time Away from Learning	2.5%	6.8%	(4.3%)

The impact of the essay writing protocol on student writing development seems to be more tentative. While a majority of students reported that the process writing protocol did help them improve their writing at least somewhat, only 42% reported that the essay protocol helped them significantly. Students were less sure about how the protocol helped them with specific skills like organization and punctuation than more general processes such as revising drafts and giving feedback (see Table 2).

Table 2: Student Perceptions on How Testing Protocol Affected Writing Skills

Student Rating	Organizing Ideas	Punctuation	Revising Drafts	Giving Feedback
Improved a Great Deal	12%	4%	23%	15%
Improved Significantly	28%	26%	35%	47%
Improved a Little	35%	40%	29%	27%
Had no Effect	25%	30%	13%	11%

Evaluation of the effectiveness of quick-correcting or minimal marking was based on errors identified in student essays. The reviewers who checked student essays (step 4) in step four of the protocol looked for errors in punctuation, agreement, word choice, possessive use, pronoun referent, spelling, proofing, and

sentence construction. We analyzed the essays to identify which of these errors students were making and how often they were correcting them.

Using three of the most recent classes (88 students), we computed the total number of errors checked during the procedure as well as the percentage of times the error was corrected by the student. Table 3 summarizes the results. Although there were some slight variations among classes, the results were consistent among classes and essay assignments. Furthermore, the rate of errors corrected remained stable from the first to the last essay, averaging around 45% throughout.

Table 3: Number of Errors Checked and Percentage Corrected on Essays						
	Essay 1		Essay 2		Essay 3	
Class (N)*	Errors Checked Per Student	% Corrected by Student	Errors Checked	% Corrected by Student	Errors Checked Per Student	% Corrected by Student
A (41)	5.08	46%	7.67	45%	5.19	47%
B (18)	5.17	42%	7.13	49%	4.79	37%
C (29)	5.62	52%	5.66	41%	5.80	46%
Total	5.28	47%	6.87	45%	5.39	45%
* The N represents total number of people in class. Some of the essays were not subject to the quick correct procedure because of absences; these were not calculated in the averages.						

The errors that students made were further audited according to type of errors. Errors were categorized according to punctuation (correct use of commas); agreement (subject-verb, pronoun-verb, verb tense); spelling (often homonym errors); pronoun referent; proofing (e.g., errors in spelling that were obvious typos); sentence (splices, run-ons, or sentences that don't make sense because of missing words); possessive, word choice errors (e.g., using less instead of fewer), and miscellaneous errors (such as mispunctuating a citation). Table 4 shows the frequency of errors checked for these categories.

Table 4: Types of Surface Errors^{*} Made in Essays

	Punctuation		Agreement		Spelling		Proofing		Sentence		Word Choice	
	E	C	E	C	E	C	E	C	E	C	E	C
A (41)	2.47	51%	.54	28%	.68	37%	.59	76%	.68	43%	.48	51%
B (18)	2.23	49%	.64	33%	.85	20%	.53	68%	.55	58%	.36	53%
C (29)	2.18	57%	.70	29%	.96	31%	.29	79%	.77	52%	.24	40%
Totals	2.33	53%	.61	30%	.81	31%	.48	75%	.68	49%	.37	49%

^{*} Note that errors in pronoun referent and possessive were also counted: Avg. of .26 possessive errors per person with 20% corrected; Avg. of .18 referent errors with 34% corrected. All other errors in this study fell into Miscellaneous

E = Errors checked in margins

C = % of errors corrected

CONCLUSIONS

The process writing intervention was intended to positively affect writing development of students in an introductory economics classroom-without degrading student learning of content. In using this protocol and reflecting on its results, several things have been learned.

First, students need guidance in giving peer feedback. At first, the instructor simply facilitated the review discussions. However, this was difficult because of the number of groups (typically the class has 30-40 students, and as many 8 groups) and the lack of structure provided for feedback. Unable to get immediate instructor guidance, groups either stumbled along or they tended to focus on surface level details of the writing. For example, a group might pass around a paper making nothing but editing corrections on it, but little on more substantive issues such as organization and development of the ideas.

Therefore, a feedback guide was developed to help focus peer feedback (see appendix A). Grammar and punctuation issues were deliberately eliminated from the form so that students would not focus on that area. While it is unclear whether the feedback guide actually helped improve student writing, we did find it helped students focus on more than surface errors.

Secondly, although the feedback guide was helpful in getting students to improve their feedback and to focus it on non-editing aspects, feedback was not always well used. We informally checked to see how the student author used the

comments, finding that not all students used the feedback they received, even if it was valid. That is, students did not necessarily revise their essays even if given helpful feedback. Fortunately, however, some did revise and improve their essay. This is certainly an area worthy of further study; especially, in helping to determine how students can be further encouraged and enabled to actually revise their essay drafts.

Third, use of the process writing protocol requires more from the instructor. Before using the process writing protocol, essays were graded mostly on coverage of the salient content points. While the old system was easier to apply, it was inadequate for the process writing essays. At first, we simply added a writing component; that is, the content was evaluated separately from a writing evaluation. Still, this was a bit simplistic and more holistic evaluation methods have been tried. We are in the process of developing a set of standard responses related to structural and style issues to help streamline the grading and commenting activity. In any case, there will continue to be an effort to integrate the evaluation as a formative input to student writing development.

Finally, while students did correct surface errors, they did not automatically correct them when given the check mark. Haswell (1983) reported 61% of checked errors were corrected in his classes; in this sample it was less than 50%. Some errors like agreement, spelling, and punctuation errors were more resistant to correction; proofing was the most correctable error. Furthermore, students would make similar type mistakes in the subsequent essays. Therefore, it became apparent, that a short workshop was needed when the first essays were handed back. In the ten-minute workshop, the common, uncorrected errors are shared, using examples from the student writing. This is a good time, for example, to point out how to correctly reference acronyms such as GNP, punctuating introductory clauses, or correcting the noun-pronoun pair of "country" and "their" (to "country and its").

Even with this intervention, students still made almost as many surface mistakes in terms of number of checks in the last essay as they did in the first (on average). Two reasons may account for this. First, students seemed to use more compound sentences and sentences using subordinating clauses in the later essays. Haswell (1988) found in an empirical study he conducted on surface errors of college students that while student errors (in areas such as spelling, punctuation, agreement, etc.) tended to increase as college students moved from freshman to juniors, student writing became more sophisticated causing more opportunities for those errors. In fact, a majority of the surface errors were ones of punctuation, which may have been caused by the more sophisticated writing forms used. A

second, though less likely, reason may relate to the types of essay questions as the later ones may have called for more sophisticated synthesis (no attempt was made to do that in writing the questions).

While we continue to develop our own ability to implement the process writing protocol, including evaluation of the writing component, the assignment seems to be effective in getting students to respond to essay questions in a more organized and competent way. As expected, we found the process essays to be superior in quality to the time limit essays assigned in the past. Importantly, the engagement in the process seems to support both writing development and conceptual understanding. However, the process writing protocol does take some additional classtime, requires that the instructor effectively facilitate peer evaluation, and requires the instructor to give formative feedback and attention to issues of writing, not just content.

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Appendix A: Peer Feedback Form Essay Evaluation Peer Evaluation Checklist			
Organization	Yes	Needs Work	Comments and/or Suggestions (Try to specifically identify the problems found!)
• Does the essay have an introduction that presents a thesis?			
• Is essay ordered logically (making it easier for reader)?			
• Is essay focused? Do all parts relate to the thesis?			
Support	Yes	Needs Work	Comments and/or Suggestions (Try to specifically identify the problems found!)
• Are ideas explained concretely (e.g., related to specific examples)?			
• Are arguments or ideas supported completely?			
• Are information and content accurate? (e.g., correct terminology used)			
Writing Style	Yes	Needs Work	Comments and/or Suggestions (Try to specifically identify the problems found!)
• Are paragraphs coherent - do they flow easily for reader?			
• Are sentences clear and precise? (i.e., understandable to the reader).			
• Are sentences free of distracting errors in word choice (i.e., are terms precise)?			
Please note: Every reviewer is responsible for identifying problems or inaccuracies in the essay content. Keep in mind that a well organized, well-written, and well-supported essay is still a poor one if it does not answer the questions or substantively address the topic.			

