

An Effective Peer Revision Method for Engineering Students in First-Year English Courses

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Abstract - Peer Revision workshops are a common feature in most composition classes; however, too often students complain that they gain little from having their peers read their writing. They feel that their peers know as little as they do, and although practice shows that peer reviewers are able to identify problematic areas in a paper, student-writers are often unwilling to listen to the advice of their peers. Similarly, some teachers have unrealistic expectations for peer review sessions, some give extensive peer review sheets that take vast amounts of time to complete, and some offer their students little in the way of advice as to how to comment on another student's paper. The result can be frustrating for all involved. However, by carefully constructing peer review sheets that match the assignment sheet, grading criteria for the assignment, and the goals for the course, instructors can create effective peer review sessions from which student writers benefit. In this paper, we will present a guided peer revision tool that can be adapted for any assignment which enables student writers to act as effective peer reviewers.

Introduction

Engineering educators recognize that it is crucial for their engineering students to develop effective communication and teamwork skills. To encourage these skills, engineering courses are assigning more writing and collaborative learning activities, or engineering courses are integrating with other courses that emphasize such skills. (At Arizona State University, the Foundation Coalition links the required first-year composition course to freshman engineering core courses.) Whatever the approach used, teachers who implement writing and active learning in their classes can enhance student success by implementing peer revision workshops as part of the curriculum.

Background

During peer revision workshops, students exchange and review drafts of essays or reports that they are writing in order to provide feedback and advice to each other with the aid of guided peer review sheets that address those features identified on the grade sheet used by the instructors. So this activity achieves both the goal of developing effective

communication skills and the goal of developing effective teamwork skills. This also identifies exactly what criteria the paper will be graded by so that students can revise their own writing and that of their peers with those criteria in mind. Such workshops are frequently used in university writing classes since this fits in with the "process" approach to composition, which teaches students invention, draft development, and revision processes to improve their writing. Also, composition research supports the notion of writing as a social act; in fact, according to Winsor, this applies to engineering communication as well. She says, "According to contemporary rhetorical theory, engineering is, like other knowledge-making activities, a social practice [1]. Peer revision enhances the meaning-creating social aspects of writing, as students discover reader reactions to their ideas. More specifically, "students learn to write by addressing the responses that their writing evokes in others. In doing so, they develop and hone expectations about the perspectives that readers bring to texts [2]. With such reader-writer interaction, peer revision sessions clearly provide many benefits. While some students and teachers may have mixed reactions about peer feedback, peer revision, when well- structured, is a worthwhile activity.

Peer Revision Defined

Sometimes mixed reactions occur because students and teachers are confused about what peer revision or review actually means, especially since so many different terms are used. The various labels can imply roles that are not actually taken by students; for example, "peer assessment" sounds like students grading students (which is problematic for writing assignments), when in fact peer assessment may just mean peer reaction to the writing. Peer revision is also called peer response, student feedback, peer evaluation, peer review, or simply group work. Basically, during peer review workshops, student writers exchange drafts and make suggestions for improvement [3]. Thus, peer review or peer revision means that students exchange drafts, and read those drafts with grading criteria in mind. They mark items that do not address the grading criteria and make suggestions for how to improve the paper so that it does meet those criteria. After peer revision workshops, the student writers are then responsible for interpreting and implementing the suggested changes for improvement. At

no time do we suggest that students “grade” each others’ work. They have neither the developed tools nor the authority to do this effectively.

Benefits of Effective Peer Revision

When such workshops are appropriately structured, students and teacher perceive many benefits. Certainly such active learning sessions allow students to build team skills needed for success in engineering. The interdependence that is created as students give and receive helpful feedback is an important part of teamwork. In addition, students take more responsibility for their work [4], which also enhances their team skills. Probst points out that with peer response, “the responsibility for making judgments about the quality of their work must become the students” [5]. Students also must be selective in considering the judgments of others on the peer review team and deciding which judgments to accept [6]; these transactions again provide practice in developing important team skills such as consensus building.

In addition to enhanced team skills, peer review workshops also encourage growth in writing skills. Lindemann overviews several advantages of peer response: “Because composing is a highly idiosyncratic affair, students who become conscious of what they’re doing by explaining their decisions to other students also learn new strategies for solving writing problem. And because students should become progressively more independent and self-confident as writers, they need to evaluate each other’s work and their own frequently, a practice which teaches constructive criticism, close reading, and rewriting” [7]. As Lindemann points out, peer revision leads to students rewriting.

These workshops encourage students to re-think and re-see their writing, an important goal for beginning writers [8] who may think of revision in more simplistic terms such as editing for spelling or punctuation. With peer review workshops, students are encouraged to revise their writing, because, as Toby Fulwiler asserts, “The real secret to good writing, for most writers, is rewriting” [9].

Peer revision also provides another writing advantage to students: a clear sense of audience [10]. With the social concept of writing in mind, group responses can “teach anticipation of an audience’s need” [11]. In fact, a study by Nystrand and Brandt asserts that intensive peer review results in better student writing because of this greater audience awareness [12]. With such positive results in both writing and teaming abilities, peer revision workshops would seem to be answer.

Difficulties with Peer Revision

Despite the many benefits that peer revision can provide, some teachers and students have had negative experiences with such activities. Students may not trust the advice of their peers, preferring to rely only on the advice of what they perceive as the ultimate authority—the teacher. The perceptions of peer revision among students are mixed, from “relatively unhelpful” to “somewhat helpful” [13]. Their attitudes may be related to other research that shows students as having “a limited sense of revision” and as being “very forgiving of papers having underdeveloped ideas and claims” [14]. Some students even fear that other students will “steal” their ideas [15].

For teachers, difficulties arise when their goals for peer response are unclear [16]. If their workshop directions to students are quite broad, the peer revision suggestions may be undeveloped or superficial. On the other hand, some teachers develop excruciatingly detailed revision directions, which students may find overwhelming. These disparate approaches may explain why surveys show teachers, as well as students, to have widely varying reactions to the helpfulness of student revision workshops [17].

The concerns and reactions of students and teachers, however, directly relate to how peer review workshops are viewed and implemented. Freedman points out that “teachers have different senses of what peer response is for” and that such practices would be better understood “if we had clearer definitions of the activities and the functions we intend certain response activities to serve” [18]. So while there have been some problems with peer revision, much depends on how teachers implement peer review sessions.

An Effective Peer Revision Method

In the Foundation Coalition program, we sought methods to effectively implement peer review workshops as we recognize that the benefits of such activities outweigh the potential frustrations. After reviewing the research, we developed a peer review tool based on the recommendations of composition and rhetoric researchers. Time and again, research indicated the importance of establishing specific criteria for the writing [19] and training students [20]. *Writing in the Disciplines* suggests to teachers that “employing a list of traits or characteristics for a specific kind of writing will help students make certain all required features of a text are handled in their essays” [21]. So our team of teachers reviewed the goals for the course as we developed the writing assignments in order to establish specific criteria for each essay. For example, a course goal is that student writers develop a clear sense of purpose and audience in their writing. Our writing assignments specify

the purpose and audience to the students; therefore, students should demonstrate their awareness of the writing situation in their essays. Likewise, students should be able to identify the audience and purpose in their peers' essays. In this way, the goals for the course are translated into specific goals for a paper, which are listed on the peer revision sheet used by students and the grading sheet used by instructors. Since we carefully review assignment directions in class, students know the context for the assignment before they begin drafting.

For peer workshops that occur early in the drafting process, the various writing goals from the assignment are listed on peer review sheets. Students are required to bring a typed draft of their paper to class on the day of peer review. Students exchange drafts with classmates and complete the review sheets as they check that the assignment criteria are met. For polished draft workshops, students use a more detailed assignment grading sheet (based on the teachers' actual grading rubric) to again review drafts according to the criteria given.

A typical advanced engineering paper might require that students write a situated report in which they imagine themselves as supervisors of new hires. They write a report to new hires explaining the key discursive practices of engineering writing [22]. Such a report requires that students write in a very formal manner following the generic expectations of the workplace setting. However, even though they may understand the assignment and how to write it, they may need guidance on how to help another student writer. Therefore, it is essential that teachers construct such a set of questions if students are to prove to be useful readers who can give constructive feedback. The problem is to help students focus on the macrolevel of the document as opposed to the microlevel. In other words, as reviewers, they need to be concerned with rhetorical strategies as opposed to word choice. The following questions, that can be set up as a checklist, are an example of goal directed peer revision:

- Is the memo heading appropriately formatted and does it identify the readers and their position, the writer and his or her position, the date, and subject of the report? Does the subject line employ a verb to make the purpose of the report clear?
- Does the purpose statement describe the problem (new hires are unfamiliar with writing) and what the writer has done? Does the purpose statement include the communication purpose of the report?
- In the Executive summary, does the writer begin by stating the problem and forecasting the discussion?
- Does this section meet a manager's needs in terms of language and organization?

- Does the writer begin the discussion with an effective introductory paragraph written to meet the needs of new hires who may not be aware that writing does differ in the workplace from school ?
- Does the writer close the introductory paragraph with a thesis that forecasts the rest of the report?
- Does each section clearly explain the writing practice to meet a new hire's need? To do this, does each explanation employ a detailed example or is each explanation supported by material from an expert source?
- Has the language has been chosen to meet a new hire's needs
- Does each sentence flow smoothly from one to the next; transitions and logic are not a problem between sentences?
- Does each section flow smoothly? Has the writer employed transitional cues and not relied on subheadings alone to help the reader navigate the document?
- Does the writer have a conclusion that draws the report together in a satisfying way?
- Does the writer consider what the readers might want from him or her and addresses this in the conclusion?
- Does the report as a whole leave the reader in no doubt as to key writing practices in this job?
- Is the whole report well supported with valid sources and employ useful, detailed examples that meet readers' needs?
- What are the strengths of this report?
- What could the writer make stronger?

Of course, just reviewing and listing the specific criteria is not enough to ensure effective peer revision. Students must also be taught useful response strategies, since "learning to critique is part of learning to write" [23]. As engineering students are already familiar with the concept of modeling, teachers can model effective responses to student writing during class discussion. For example, a sample thesis statement or introduction can be shared with the class and commented on. Even a few minutes going over one draft together before a peer revision session can result in more thoughtful student response [24]. Besides demonstrating response strategies, teachers should generate peer revision guides that encourage thorough student review.

Results

Because our peer revision instrument, in addition to listing the specific goals and criteria for the assignment, asks student reviewers to tell the student writers what went

especially well in the essay and what still needs work [26], this open-ended section of the peer revision tool gives students insight into how a reader might react. Such positive feedback reinforces what student writers are doing well and what could be made stronger [27]. Although we have not consistently recorded data on the improvements in student writing as a result of this peer revision method, students consistently refer to the benefits of peer revision and the use of peer revision sheets in their reflective portfolio letter which they write at the end of the semester. In this letter, they comment on their growth and development as a writer, and most students note the value of peer review. Of course, many explain that they themselves doubted the value of peer review at the beginning of the semester. As one student wrote early on, "How can I help someone when I'm just a 'C' writer." By the end of the semester, this student and his peers were confident in their own judgments and were eager to follow the advice of peers. When we suggested canceling a peer review session to allow the students time to work alone on a paper, they asked for the peer review session. Thus, with class demonstrations and theoretically grounded peer revision sheets, students can indeed become helpful peer reviewers.

Conclusion

With carefully planned response workshops, students will develop their writing and team skills; moreover, research demonstrates that teachers and students "can often agree on what contributes to the effectiveness of written discourse" [28]. Since engineering educators are particularly cognizant of the importance of communication and team skills for their students, they should consider implementing classroom tools that promote these abilities.

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<http://www.public.asu.edu/~atjsd>

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