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Form Ever Follows Function: Using Technology to Improve Feedback on Student Writing in Law School

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Form Ever Follows Function: Using Technology to Improve Feedback on Student Writing in Law School

Daniel L. Barnett

ABSTRACT

TITLE: Form Ever Follows Function: Using Technology to Improve Feedback on Student Writing in Law School

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ABSTRACT: Critiquing student writing is an important responsibility of many law professors. While the focus of a teacher's critique should be on the substance of the feedback, teachers should also consider the form of the critique to ensure that they are providing the necessary guidance to students effectively and efficiently. When choosing the critique format, teachers have a variety of options, including several electronic techniques. Unfortunately, many teachers have not considered the use of technology to comment on student writing. However, advances in technology coupled with the technological savvy and comfort level of today's student, may eventually dictate that all law teachers use some kind of electronic feedback when commenting on their students' papers.

This article is designed to encourage law professors to consider the use of technology to comment on student assignments by demonstrating that an electronic format could help many teachers be more proficient when critiquing their students' writing. To help teachers determine the best critique format for their classes, the article provides a comparison of the different commenting methods and explores the considerations teachers should use when choosing the form of feedback. The article closes with a step-by-step guide to the current technology for providing comments on student writing electronically.

Form Ever Follows Function: * Using Technology to Improve Feedback on Student Writing in Law School

Daniel L. Barnett*

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I. Introduction

Critiquing student papers is an important responsibility of many law professors, including teachers in first-year and advanced legal-writing courses and professors who teach courses that include writing assignments.¹ Providing feedback on student writing is time consuming and intellectually challenging.² In most situations, the teacher must diagnose the major analytical flaws in the student's paper and provide the student adequate guidance to rewrite the paper.³ Therefore, the teacher should carefully consider the content and form of feedback that will be most efficient for the teacher and most helpful to the students.⁴

While the focus of critique should be on the substance of the feedback, teachers should also consider the form of the critique to ensure that they are providing the necessary guidance to students effectively and efficiently.⁵ If the teacher develops the right format for her critique, the teacher will be better at providing students with complete analytical guidance. Developing the best critique format will also help students benefit from the substance of the feedback.

When determining the most effective and efficient mode of critique, teachers have a variety of formats they can use to provide their comments on student assignments, ranging from handwritten comments to electronic comments embedded in the student drafts. Often handwritten comments are the first choice, and although this method may provide some advantages, many teachers handwrite comments without fully assessing different critiquing options that may be available. In addition, some teachers use handwritten comments simply because they are intimidated by technology. Therefore, many teachers have not considered the use of electronic critique so the teachers and

students are not benefiting from the advantages of electronic feedback techniques in their law school courses.⁶

The goal of this article is to encourage law professors to examine the different critiquing formats available and to consider using some form of electronic critique. The article does not promote the use of technology simply because it is available. Rather, moving to an electronic critique format could help many teachers be more proficient when providing comments to their students' writing.⁷ While many considerations may support the use of either traditional or electronic critique methods, many factors support moving to some type of electronic commenting. Furthermore, advances in technology coupled with the technological savvy and comfort level of today's student, probably will eventually dictate that all law teachers who comment on student papers use some kind of electronic feedback. Therefore, teachers should begin to evaluate how current technology could improve their methods of providing feedback on student assignments and prepare themselves to use these tools.

To help law teachers examine the different formats for critiquing student work, this article provides a quick comparison of the different methods of giving feedback on student papers in law school courses in Part II. Part III explores the variety of considerations teachers should use when choosing the form of feedback on student assignments. In Part IV, I explain how these considerations have convinced me to experiment with technology with the critique in my first-year legal writing course. To help make the transition to electronic critique less intimidating, Part V provides a guide to master the technical aspects of the current technology.

II. Comparison of Different Critique Formats

Law professors use a variety of techniques to give their students feedback on written work. These different methods can be divided into two basic categories: traditional hard-copy critique and electronic critique. Traditional hard-copy critique includes all types of critique that are made on paper copies of student assignments. Electronic critique consists of the different methods of imbedding critique in student assignments electronically.

Most professors have made comments on hard copies of student papers, but fewer teachers have experimented with providing feedback on electronic versions of student assignments.⁸ To determine which critique format is best for their teaching, teachers should consider the advantages and limitations of both traditional hard-copy and electronic feedback. This section will compare the benefits and drawbacks of the various options to help demonstrate that some form of electronic feedback provides most, if not all, of the benefits of traditional hard-copy feedback, and several additional advantages.

A. Traditional Hard Copy Critique

Handwritten comments on hard copy, is the time-tested method for critiquing student assignments.⁹ For many law teachers, providing comments on hard copies of the documents seems like the most natural way to respond to student writing. The teachers who practiced law before teaching often handwrote comments on hard copies of documents in practice.¹⁰ In addition, most law professors learned to read documents in hard copy and have an easier time processing the information they are reading when handling the paper it is written on. The physical interaction between the teacher's comments and the paper copy of the student's writing often helps the teacher focus her comments and think about the best advice the student needs on the assignment.¹¹

For many of the same reasons, receiving comments on the hard copy of the paper also helps many students process the information because many of our students are accustomed to reading and working with ideas through hard copies of documents. The immediacy of comments on the hard copy often forces the student to reconcile the comments on the paper with the student's own expression of his ideas.¹²

There are a variety of forms that critique on paper copies of student assignments can take: handwritten comments, typed comments, voice comments and live conferencing. This section will discuss the benefits and limitations of these traditional critique methods.

1. Handwritten Comments

Most new teachers comment on their first papers by writing their comments on the paper copies of student assignments. When handwriting comments, teachers often use a combination of short margin comments, editing revisions and longer summary comments. This combination of handwritten margin comments along with editing suggestions and summary end comments can be very effective.

Handwriting margin comments is an efficient way to provide reactions to the student writing at the very point in the student's writing that she thinks needs a comment. Providing the teacher's reaction on the margins next to the student's writing provides immediacy in the feedback that helps the student understand more fully the impact of his writing on his audience.¹³ With handwritten comments, the teacher can easily combine margin comments with specific revision suggestions by editing portions of the student's writing. The combination of short descriptive comments with an editing suggestion often

helps demonstrate the teacher's point more clearly to the student than a comment or editing change alone.¹⁴

In addition to the margin comments and editorial revisions, teachers can handwrite longer summary comments at the end of different sections and the overall paper. The summary comments allow the teacher to develop the ideas in the margin comments more fully and to provide an overall assessment of the student's ideas. By providing the suggestions in a longer comment at the end of the section or the paper in addition to giving margin comments, the professor may be able to better explain the student's problem and therefore fully explain how the student should focus his efforts in the revision process.¹⁵

Handwritten comments have other advantages. Handwriting the feedback may help some teachers prioritize their comments because handwritten comments have to be fairly short and writing out the comments is physically demanding. The space limitations and physical demands of handwritten comments often forces teachers to carefully choose the issues from each student paper to address in the comments.¹⁶ This process of prioritization is an important part of giving helpful critique to students.¹⁷

Handwriting margin and summary comments also helps the professor stay attentive as she works her way through the student papers. When working on a large set of assignments, staying focused is often challenging, so teachers need to find a technique that helps them stay on task.¹⁸ Margin comments provide a systematic way to work through the issues identified in each student paper because the teacher provides comments chronologically, as the teacher identifies the areas that need to be commented on.¹⁹ In addition, all the teacher needs to critique the papers is a pen and the papers to

critique. Thus, taking the papers away from the office to work on the critique is very easy. For some teachers, a change of scenery when grading a large number of papers also helps them stay focused.

Many of the advantages of handwritten comments are also shortcomings. Although the immediacy of handwritten margin comments may be helpful to many students, writing comments in the margins can give the impression that the professor has taken control of the student's paper by writing all over it.²⁰ The visual impact of many comments written on the paper, no matter what the substance of the suggestions, gives the impression that the student has failed and the teacher has taken over the writing.

Furthermore, margin comments naturally break up the writing and the revision process for the student because they focus on individual issues in the student's paper. Providing several specific comments to individual issues may not allow the professor to fully reflect on the root of the various problems in the paper. At first glance, it may appear that the problem is how a particular paragraph is constructed, but in fact the problem may be more systemic.²¹ If the teacher relies too heavily on margin comments, she may not take the necessary time to understand and explain the true problem.²² In addition, a student's ability to incorporate the different separate comments in the revision process may be less effective because the student may have a difficult time using the comments holistically to bring the paper together.²³

The use of longer summary comments may help alleviate some of the shortcomings of margin comments. However, handwriting long summary comments is time consuming and physically exhausting. Therefore, handwritten summary comments may not be as complete as they should be to fully guide the student's revision.

Another limitation of handwritten comments is that making changes to them is very difficult. As a professor works her way through the paper, she may realize that an earlier comment was not the best feedback to give the student. The only way to make changes to earlier comments is to erase them or cross them out. Confidence in the teacher's feedback may be reduced by leaving erasure marks or crossing out comments on a paper. Finally, handwritten comments are often difficult for the student to use because handwritten comments are sometimes hard to read. The last thing a student needs is to struggle with the readability of comments in addition to the analytical challenges.²⁴

2. Global Comments

Distributing global comments to the entire class is a technique that many teachers have found helpful.²⁵ Global comments describe the common problems that the teacher identified when reviewing the student assignments. Providing a description of the problems the entire class encountered with an assignment often helps students identify and more fully understand the problems in their own papers and helps them realize that they were not the only ones to make substantive mistakes in the draft. Global comments also provide the teacher with an opportunity to clarify comments she was making on individual papers. After critiquing all the papers for an assignment, the teacher may better understand how to articulate a comment she made on all the papers individually. Instead of attempting to revise all the comments on the individual assignments, the teacher can address the issue in the global comments.²⁶

3. Typed Comments

Instead of handwritten comments, the teacher can provide typed comments in a separate document that is printed and attached to the student's paper when it is returned. The comments can be numbered and the corresponding number inserted by hand on the student's paper. Using this numbering technique allows the professor to type the margin comments in addition to the longer summary comments at the end of sections and the paper overall.

This method is good for several reasons, in addition to being easy to read. Typing comments in a separate document with numbered references provides the student with in-depth comments while leaving the student's own paper intact. Thus, the typed comments do not risk destroying the integrity of the student's work the way handwritten comments can.²⁷ Additionally, requiring the student to read the comments in one document and apply the suggestion to his own writing often helps the student work with the ideas more holistically and gives the student ownership of the revision process²⁸.

Moreover, typed comments seem more authoritative and help demonstrate that the teacher has given serious consideration to the student's writing. Demonstrating the care the teacher has taken in providing feedback should help students feel encouraged to work with the teacher's suggestions in the revision process and may help the comments feel less personally critical to the students than handwritten comments.

Furthermore, by typing the comments the teacher will be able to process and refine the comments because she may insert comments in different places on the paper as she works through the student's assignment and may revise and make changes to earlier comments, if necessary.²⁹ If the professor realizes that an earlier comment is not valid

because of something identified later in the student draft, the professor can easily delete or revise the previous comment.

Another advantage is that typing comments is faster for most people than handwriting comments. Therefore, the teacher can provide more in-depth comments without spending a lot more time.³⁰ Thus, all of the comments, including the margin comments and the summary comments, can be more complete without being more exhausting to write. However, because typing is so much faster than handwriting comments, there is a risk that the teacher will overwhelm the student with comments that are too long and detailed.³¹

Typing comments also allows the teacher to use master comments. Master comments are similar to global comments discussed above.³² In a given set of papers, similar analytical or organizational issues may be common to a significant number of students. The teacher can draft master comments addressing those issues in a separate document or using the feature of word processing applications that allows the use of inserting the same text in different places.³³ Then, instead of rewriting the comment for each paper, the teacher can copy and paste the master comment at the appropriate place in the critique. The teacher can easily tailor the master comment to address the specific problems in the student's writing.³⁴ The use of tailored master documents saves time and may help ensure fairness. With master comments, the teacher can provide the same guidance to all students who struggled with the same issue, yet respond to specific problems in a student's assignment so the comment relates to the strengths and weaknesses of the student's own writing.³⁵

Typing comments and referring to them by number in the student's paper also allows for easy reference to a comment when the same issue appears in the student's paper more than once. If the teacher identifies the same issue at different places in the paper, the teacher can simply re-insert the number of the relevant comment at several places in the draft. Often, seeing that the same issue created problems at various points in the draft is helpful for students to fully understand the issues that need to be addressed in the revision process.³⁶

4. Live Conferences

Live conferencing is a technique where the professor critiques the student paper during the teacher-student conference. The teacher reads and reacts to the paper as the student is sitting in the meeting with the teacher, thus avoiding the need to read and critique a paper and then meet with the student after the critique has been returned.³⁷ Meeting with students to review their papers individually provides the teacher with instant feedback from the student and helps the teacher understand if her comments are being received accurately. The give and take of this discussion often provides a more complete feedback experience.³⁸ When providing feedback in writing to a student's paper, the teacher is guessing as to what the root of the problem is when commenting on substantive issues. In other words, the teacher is attempting to get inside the head of the student through the student's written work.³⁹ In a live meeting with the student, the professor is able to ask exactly what the student was attempting to explain in the paper or ask why the student chose a certain way of articulating his ideas. The student's response allows the teacher to provide feedback to the actual problem rather than reacting only to the words on the page.

In addition, the live conferencing approach provides the teacher with an opportunity to fully explain her ideas to the student. Once the teacher understands the student's specific problems, teacher more may more easily provide targeted and thorough guidance to the student. The targeted, but complete approach, often results in more substantively sophisticated feedback and helps the student work his way through difficult analytical problems during the conference. Making progress on the substantive challenges during the conference helps students more successfully rewrite the assignment.

Live conferencing does have several important limitations. The use of live conferencing is difficult on graded assignments and impossible with anonymously graded assignments. Furthermore, some teachers have difficulty reading student papers during a conference and reacting immediately to the student's work. Therefore, the teacher may need to read the paper and take notes before meeting with the student. Taking notes on the paper before the conference creates more work and therefore eliminates much of the efficiency benefit of live conferencing. In addition, if the teacher reads the paper before the conference, the student does not benefit from the teacher's immediate reaction as the reader, which is one of the main benefits of the live grading experience.⁴⁰

Furthermore, if the teacher is providing lengthy analytical comments during the critique, the student meetings need to be much longer than traditional conferences because the teacher needs time to critique the student paper and discuss her suggestions with the student.⁴¹ This may be as much time as critiquing the memos and meeting students after they have received the critiqued papers. With a large class, it can take several days, if not a couple of weeks, to complete all the conferences. If the students are

rewriting the papers, this time lag may create fairness issues for the students who are not able to meet with the professor until the end of the conference period.

Finally, some students are unable to take accurate notes during the live conference. Without accurate notes of the meeting, students are not able to effectively use the feedback when rewriting the assignment. Even for students who seem confident during the conference about the issues that needed to be addressed, without sufficient notes to guide the revision process, they will not be able to effectively use the ideas they understood during the meeting. To avoid this problem, teachers may need to provide a quick written critique in addition to the live conference. If a teacher provides written comments, however, they may provide complete critique in writing and then again during the live conference. Providing two critiques on one assignment obviously loses the efficiency of live conferencing.⁴²

5. Taped Comments

Some teachers prefer recorded voice comments to provide feedback.⁴³ Voice comments allow the teacher to provide extensive feedback quickly and efficiently. Teachers can number comments on the hard copies of the assignments and record corresponding comments. With voice comments, the teacher is able to have something similar to a conversation with the student about the student's writing. Therefore, voice comments provide many of the advantages of live conferencing.⁴⁴ Teachers can respond immediately to the student's writing and explain the teacher's reaction easily with recorded comments. Because the teacher is talking about the paper, rather than writing down her reactions, the comments tend to be more extensive and more conversational than written comments. Often, this combination of extensive reactions in a

conversational voice forces the student to identify the underlying problem that caused the teacher's reaction. Forcing the student to identify the problems from the teacher's reactions is a useful learning tool to help the student uncover the true issues through the reader's reaction. This process gives the student ownership of the revision process because he is not simply trying to write what the teacher told him to do.⁴⁵ Instead, he is forced to identify and correct the problem on his own. Taking an idea from a voice comment and integrating the idea into the rewrite requires more analytical understanding by the student than a simple insertion of a suggested change.

In addition, with voice comments, the students are required to take notes on the teacher's comments to summarize the critique and make the revision process efficient. Otherwise, the student would have to listen to the same comments over and over. The process of summarizing the comments may be the main advantage of voice comments because the students are required to fully understand and boil down the teacher's reaction. In written comments, the teacher herself has often done this summarization process for the student. But giving the student the benefit of an extensive voice reaction to the student's paper and then making the student summarize the suggestions, is an important step in correcting the problems for the revision.

Practically, voice comments give the teacher many options of where to place comments and what approach to take on the critique. The teacher may simply work through the paper chronologically and provide her reactions to the student paper as she works through the paper using numbered comments. Or, the teacher may decide that longer comments at the ends of sections may be best for a particular student, so the teacher can read an entire section and provide one long comment for that section.⁴⁶

Teachers also may provide some written margin comments and quickly make editing changes in addition to the voice comments.

Finally, voice comments may be easier on some teachers physically. When recording comments, the teacher is not required to sit at a desk, but may walk around with a portable recorder to record the comments. Furthermore, taping comments eliminates the need to type extensive comments, so the risk of carpal tunnel stress and other physical problems caused by excessive keyboarding are reduced.

There are several disadvantages to voice comments. First, the ability to make extensive comments may mean the teacher does not prioritize her comments sufficiently.⁴⁷ The lack of prioritization may make the revision process more overwhelming for the student. Similarly, many teachers use the writing process to perfect their comments. For those teachers, voice comments may not provide the best format for their critique.

In addition, the teacher must be very aware of the tone of her voice when recording comments. Being aware of the tone is particularly challenging at the end of a long day when the teacher is tired. Hearing fatigue in the teacher's voice may give the student the wrong impression about the teacher's reaction to the student's paper.⁴⁸

Using voice comments also creates challenges when meeting with students to discuss their papers. With written comments, the students can bring in their papers and show the teacher any comments which are unclear to the student. Referring to the paper is even possible with anonymous grading because the student can bring the paper and the comments to the conference. With voice comments, referring to the comments themselves is much more difficult.

B. Electronic Critique

Current technology offers a variety of electronic critiquing options. Basic commenting and editing features of word processing applications allow teachers to comment on papers electronically in much the same way they would provide feedback on hard copies of the assignments. Other features offer flexibility and other advantages over handwritten critique. Therefore, some type of electronic feedback may be an option for all teachers, even those who are convinced of the advantages of traditional handwritten comments.

1. Electronic Typed Comments and Editing Changes

The easiest way to begin using electronic commenting is to use the feature of word processing applications that allows the user to insert comments and make editing changes to the text.⁴⁹ These features allow the teacher to imbed margin and summary comments in the students' drafts and to make editing suggestions. The use of these features offers a technique that is similar to traditional handwritten comments and yet provides all of the benefits of typed comments.⁵⁰ The teacher can insert short margin comments and editing changes at relevant places in the text and provide longer summary end comments where appropriate. To make a margin comment, the teacher simply highlights text and then selects the option to insert a comment. The teacher can insert shorter comments in "balloons" that appear in the margins and longer comments in the text of the student's paper.⁵¹ For comments that do not fit in the balloons, the comment feature automatically puts the entire comment in an endnote format at the bottom of the page. Thus, for the teacher who has previously typed comments in a separate document

and attached it to the student's draft, the only change would be to type the comments using the comment feature.

Using the commenting function to insert comments has additional benefits compared to typing comments in a separate document. Inserting the comments at specific points in the student's writing as margin comments provides the benefit of the immediacy of the comments that is a major advantage of handwritten margin comments.⁵² Summary comments can be included as balloon comments or the teacher can insert the comment by typing at the relevant point in the student's text. Because the teacher is typing all of the comments, even the shorter margin comments, tend to be more extensive and complete.⁵³

In addition to inserting comments to the text, word processing applications allow the teacher to give editing advice to the student using the "track changes" function.⁵⁴ This feature allows the teacher to make deletions and changes to the document that are tracked and highlighted by the word processing application.⁵⁵

Inserting typed comments electronically in the student assignments provides practical advantages. The teacher can transport all of the papers in her laptop. Thus, the teacher can easily critique the papers in any location where a laptop can be used.⁵⁶ In addition, electronic submission and return of student papers is very easy.⁵⁷ Students can e-mail their assignments to the professor or a third party if papers are graded anonymously.⁵⁸ Furthermore, most course websites include an assignment function where students can upload documents and receive critiqued assignments from the professor.⁵⁹

2. Embedded Electronic Voice Comments

The comment feature in Microsoft Word also allows the insertion of digital voice comments in documents.⁶⁰ In the same way the teacher would insert a typed electronic comment, the teacher highlights the relevant text and chooses the option to insert a voice comment. A small icon appears with recording controls that the teacher uses to record the comment. Using this feature allows the teacher to insert digitally recorded voice comments into places in the student draft where the teacher thinks a comment would be helpful.⁶¹ In addition, the teacher has the option to use the track changes feature to make editorial comments.⁶²

The voice comment feature provides all of the same benefits of taped comments.⁶³ In addition, the feature provides the flexibility to insert the voice comments directly into the student's paper so the comment is more immediate than taped comments. Furthermore, inserting short comments throughout the draft is easier than with taped comments.

Finally, the major advantage of the voice comment feature is the flexibility when working on the student paper. With taped comments, the teacher has to record all comments chronologically. With the voice comment feature, the teacher can go back and forth throughout the draft to insert comments when the teacher thinks it is appropriate. This allows the teacher greater flexibility when working through the critique. If the teacher decides that she should have made a comment on an earlier page, the teacher simply moves her cursor to that page and inserts a new comment.

Another advantage of the voice comment feature is that the comments may be copied and pasted into other documents.⁶⁴ Copying and pasting voice comments allows

the teacher to make global or master comments and copy and paste comments at the appropriate place in student papers. This is not possible with taped comments.

Although the return of student papers should be very simple when using voice comments because the student papers are returned as one document with all comments, the size of the files with voice comments creates several challenges. The files of the critiqued papers with the voice comments use a tremendous amount of memory. Due to the size of the file, transferring the files between computers and uploading to websites can be difficult. Using e-mail to transfer the documents is also very difficult, if not impossible. Uploading the files from a home internet connection, even a high-speed connection, can be time consuming.⁶⁵ Finally, the size of the files creates particular problems when attempting to back up the documents.⁶⁶

Another problem with inserted voice comments is that the size of the files seems to make the documents unstable. Due to the instability, data can be lost when transferring the files. When this has happened, the transferred file has “corrupted” voice comments, meaning the comments will not play. Most often the original file is not affected, but the copied version has to be recopied.

Another consideration when using the voice comment feature is that Macintosh users may not be able to listen to the comments on their computers.

3. Voice Comments with Digital Recorder

Recording comments with a digital recorder is another option for providing voice comments electronically. Digital recorders are stand-alone devices that are about the size of a cell phone. The devices have a microphone and record sound digitally onto small disks. Using a digital recorder to record comments is much like using a tape recorder.

The main difference with a tape recorder, however, is that the digital recorder allows the teacher to provide individual comments to a student's paper that are numbered automatically by the device.⁶⁷ Therefore, the teacher simply needs to add the number of the comment at the corresponding point in the student's paper. To allow for electronic return of the assignments, inserting the numbers into the student's paper can be done electronically by using the comment feature of the word processing application.⁶⁸

The use of a digital recorder provides almost all of the advantages of electronically imbedded voice comments. The teacher may insert comments at various places in the student draft. The teacher also may insert comments at one point in the student paper, even if the teacher has made comments later in the draft because the digital recorders include a function that allows insertion of new comments between previously recorded comments.⁶⁹

The use of a digital recorder provides some benefits over the voice comment feature of word processing applications because it avoids some of the technical problems. The files are much smaller and can be "zipped" for ease of transfer.⁷⁰ Therefore, the instability problem of voice inserted comments is not a concern.⁷¹ In addition, the use of a digital recorder means the teacher is not tied to the computer when making comments. The teacher is free to get up from her desk and walk around as she makes comments. Finally, unlike the voice-embedded comments in Microsoft Word that can only be accessed by computers running PC software, digital recordings can be heard on all computer platforms and a variety of other digital devices, including Ipods and MP3 players.⁷²

The major disadvantage of digital recorders is that the comments cannot be embedded in the student's paper. Therefore, the teacher must return the student's paper as one file and the digitally recorded comments separately. The return of separate files creates additional administrative burdens.⁷³

III Considerations When Choosing Critique Format

The teacher should consider many factors when determining the form of the feedback on student writing assignments that will work best for the teacher and students on any given assignment. Many of these considerations support equally the use of traditional hardcopy critique or some type of electronic feedback. Other considerations may weigh in favor of traditional handwritten critique while some factors support electronic commenting. However, when considering the practical benefits of electronic methods, teachers should at least consider experimenting with some form of electronic critique.

Many important considerations could support the use of electronic or hardcopy critique. For example, a primary consideration is the analytical goal of the comments. The amount and type of feedback that students may need varies from course to course and problem to problem. For instance, feedback on draft assignments in first-year writing courses to help the students rewrite the assignment may require long, in-depth comments because the focus is on the analytical issues of the student draft. First-year students often need detailed feedback when learning these new reasoning skills.⁷⁴ In upper-level writing or seminar courses, however, the type of substantive help that students need will be different. In advanced courses, students may need more assistance with larger conceptual and organizational issues than core reasoning skills.⁷⁵ Electronic

comments might be best for long, detailed comments, while handwritten comments could be the most practical technique for providing feedback with shorter specific comments.

Similarly, some assignments pose difficult analytical hurdles, while others may present basic organizational challenges. Therefore, the suggestions necessary to help the students deal with the different problems may affect the type of critique format the teacher chooses. In addition, the type of feedback that will best help students may change as the course progresses. Because feedback later in a course will build on the ideas that were developed at early stages of the class, the detail of the teacher's comments to students probably will change as well.⁷⁶

Furthermore, the teacher's own writing process and teaching style will affect the type of critique that is most effective for the teacher. For many teachers, providing feedback on student writing is as challenging as writing something themselves.⁷⁷ Therefore, the type of feedback a teacher uses should help the teacher develop her own method in providing effective comments to the students. Some teachers are better at providing quick, reactive comments, where others may need more time to reflect on the ideas being suggested to students.⁷⁸ Handwritten comments may be the best vehicle those who like to react quickly to student writing, while longer typed comments may help teachers who use the writing process to clarify their ideas because they can use the word processing applications quickly revise their ideas as they are writing them.

The fact that people process writing differently when reading from a computer screen than writing in hard copy might convince some teachers that traditional hard copy critique is better for them and the student. Research indicates that most readers process information at a slower rate when reading from a screen.⁷⁹ Furthermore, reading on a

computer may focus the reader on small-scale issues instead of larger idea.⁸⁰ Focusing on small details may mean that the professor does not give adequate guidance on overall organizational or analytical problems in her critique. Similarly, the student may have problems reworking global issues if he focuses on small details in the paper at the expense of larger problems when processing the teacher's comments on a computer screen.⁸¹

If the teacher opts for electronic critique, she will need to develop strategies for her and her students to avoid these problems if the teacher determines that computer-screen reading creates these challenges in her class.⁸² However, because students are increasingly accustomed to reading from computer screens, these concerns may be more relevant to the teacher than her students.⁸³ Nevertheless, as the teacher reads more and more papers electronically, she will become more proficient at evaluating and commenting on what she reads electronically.⁸⁴

While many factors could support the use of either traditional hardcopy or electronic comments, several considerations may tip the balance in favor of electronic critique for many teachers. The learning styles of current law students have been affected by the integrated use of technology at home and in education since our current students were young children.⁸⁵ Thus, working with electronic comments is the way they would naturally process information because they learned to read and write using technology.⁸⁶ By using a format they are accustomed to, students will have an easier time working with the feedback and therefore the time spent on providing comments will be more effective.⁸⁷

The need to prepare our students for law practice is another factor that supports the use of electronic critique. Most lawyers in practice are now revising documents electronically for inter-office use and to negotiate language of agreements in transactions.⁸⁸ Furthermore, many courts and administrative agencies are moving to a paperless system.⁸⁹ Therefore, students need to learn how to manipulate documents electronically and process others' comments in an electronic medium. Training students to use electronic comments in law school will help prepare them for what they will experience in practice.⁹⁰

In addition, the use of electronic commenting might appear more professional to the students because the teacher is taking advantage of technology to provide the feedback. By using the advanced electronic critique techniques that are used in law practice, the teacher will appear to be an expert in current technology so the students will have confidence in the teacher's expertise and feel well prepared with technologies used in practice. In addition, by using the most advanced format of comments, it appears that the teacher has taken the student's work seriously and has invested a substantial amount of time and thought into the critique.⁹¹

Moreover, the ease of electronic submission and return of student assignments provides efficiency and may soon be the norm expected in all law school courses.⁹² Using electronic submission avoids the stress and administrative burden of collecting paper copies of writing assignments. Students may submit assignments from home, avoiding the mad rush to the law school to get the paper submitted before the deadline. The automatic time record of electronic submission also avoids the debate of when papers were actually submitted that sometimes occurs with hard copies of student

assignments.⁹³ Similarly, assignment return is very easy electronically.⁹⁴ Teachers simply have to send the papers by e-mail or upload them to the course website. With website return, most websites allow the teacher to upload papers as she completes them and release all of the papers, with a grade, at the same time. Students are not required to be at the law school to receive their papers, but can instead access them from any computer connected to the internet. By uploading the assignments to the website, or sending them to students via email, the teacher has an electronic copy and record of transmission for her files.

Finally, students seem to prefer electronic feedback because the electronic comments are easier to work with and demonstrate that the teacher values their work more.⁹⁵ Although making our students happy should not be the primary goal in teaching, if the use of technology helps the students feel more positive about their writing experience in law school, their positive reaction to the use of technology should be considered when determining the best critique format to use.⁹⁶

IV. Does Technology Actually Improve Feedback on Student Assignments? One Teacher's Experience

As a writing teacher, I have learned that the comments I provide on student assignments is a central part of my teaching. What I do in the classroom affects the type of comments I make on student assignments and the feedback I give in my critique informs what I do during class sessions and how I interact with students in individual meetings. This relationship between my teaching and the feedback I give on student assignments has meant that the critique format I find most helpful is ever changing. Thus, I have experimented with almost every type of critique described in the sections

above. Although not all of the different formats I have tried have worked for me, each new experience has improved the feedback I give my students.

When I critiqued my first set of student papers during my first year of teaching, I did not contemplate any critique format other than handwritten comments. However, I had no choice but to consider other options for one simple reason: My students could not read my handwriting. Therefore I had to use some version of typed comments. The success of my first experience using a new critique format has given me the courage to experiment with a variety of techniques over the last 17 years teaching the first-year legal writing course.

The form of critique I have found most helpful is directly affected by the substance of my comments.⁹⁷ I grade and critique several draft assignments in my first-year legal writing class over the course of a full year. The goal of the critique is to provide students the necessary guidance to successfully rewrite the assignment. Each assignment is designed to help students learn a variety of analytical skills, beginning with case synthesis in the fall semester and ending the year with the creative use of legal reasoning to make persuasive arguments. Therefore, my comments on the assignments are usually in-depth analytical suggestions to help students recognize flaws in their analysis based on the relevant authority.⁹⁸ To be effective, I vary the type of feedback I use in my comments on student papers to help challenge students to work with their ideas, much like I do in class discussions. In most feedback, I provide a combination of fairly directive comments with more open-ended Socratic questions that challenge students to rethink their ideas.

A. Changing from Handwritten to Typed Comments

Like a lot of new legal writing professors, I wrote my comments in the margins of the students' papers when I critiqued my first set of papers.⁹⁹ Handwritten margin comments seemed natural to me because I had always received comments on my own writing in law school and in practice in this way. Furthermore, handwritten margin comments seemed like an effective way to provide comments to students because it allowed me to react to their writing in the same way I had commented on documents in law practice.¹⁰⁰

I quickly realized however that handwriting my suggestions to my students, was not practical because my handwriting is not very legible. I spent much of my time in conferences reading my comments so students could understand them. Although the students were very patient, trying to decipher my writing was not how I wanted my students spending their time in my course. I wanted them to focus on the substance of my comments. Therefore, in my first semester of teaching I was forced to change my critique format to improve the experience for my students.

For the next assignment, I purchased a personal computer and I began typing my comments. I typed numbered comments in a separate document and handwrote the number in the margins at the relevant points in the students' paper. I printed my comments and stapled them to the students' assignments. When making my comments, I forced myself to not write anything other than the number of the comments in the margins so all comments were typed, though I did allow myself to make some editing changes by hand if I thought editing suggestions would be helpful.¹⁰¹

The benefits of typing my comments over handwriting them were apparent after commenting on just a few papers. In addition to making my comments legible, typing

the comments was much easier on me physically. Furthermore, the substance of my feedback improved because I could easily revise my comments. I learned that, like all of my writing, it helped to think through my ideas in writing when I was providing comments on the papers. Typing the comments allowed me to engage in this type of process writing when providing feedback to my students.

In addition, I was able to change comments on all the assignments if necessary. Sometimes when I was almost done critiquing all the assignments, I realized that I should have been saying something differently. Using typed comments, I could easily go back and revise my feedback on earlier papers. I also quickly saw how easy it was to refer to the same numbered comment at several different places in the student's paper. If I saw the same problem in more than one place, all I had to do was add a margin comment telling the student to refer to the relevant comment by number.

The result of the change was that my comments were much more substantive on the papers in the spring than they had been when I handwrote my comments in the fall. Typing the comments allowed me to provide longer comments that reflected the type of teaching I did in class because I could type much more detailed comments than I was able to handwrite on the student papers. Some comments were very directive advice on what changes needed to be made, while other comments were much more open-ended question to challenge the students' reasoning. The students found the more in-depth typed comments more helpful than the shorter handwritten suggestions. Furthermore, my conferences for the spring assignments focused on the substance of my comments and how the students needed to work with my comments in the revision process, rather than

on questions about what I had written or meant with the shorter handwritten comments in the fall.

I also found that my students were more willing to accept my suggestions with the typed comments. They seemed to take my feedback much less personally than they had when I handwrote the comments. I think this was because the criticism felt less personal and the suggestions more authoritative when I took the time to type out my ideas in longer complete comments.

Therefore, the next year I continued to type my comments and began to experiment with master comments.¹⁰² Often, all of my students struggled with similar analytical problems on the draft. I began writing comments about several issues that I saved in a master document. For most students, I could copy and paste the basic comments into my feedback on their papers and tailor the comments to each student's paper. I found that this helped me provide consistent analytical advice to all students and it helped save me time. Soon, my comments were even more in-depth and the guidance the students received was much more helpful, though often more challenging.

For some assignments, I prepared global comments for distribution to the entire class as a supplement to the comments on each paper.¹⁰³ I sometimes referred to these global comments in my specific comments. Eventually, I began to distribute annotated samples with comments that were similar to the types of comments I provided on critiqued assignments.¹⁰⁴ Using annotated samples with numbered comments helped the students become accustomed to my system of feedback before receiving my comments on their first assignment. It also allowed me to refer to annotations in samples by number in my comments to student papers. Referring to annotations in the samples often saved

me time and helped clarify my comment by sending the student to a specific place in a sample that we had discussed in class.

B. Experimenting with Live Conferences

As I continued to use typed comments, several of my colleagues decided to experiment with taped comments. They felt the experience was good for them and their students because taping the feedback allowed them to have more of a conversation with the students about their writing. The conversational format seemed to allow them to provide longer, more in-depth comments than typing allowed. I liked the idea of having a conversation with my students in my critique, but I resisted moving to taped comments because I like the ability to use comments from a master document and revise them for each student. With taped comments, I would not have been able to use master comments in the same manner I found effective with typed feedback.

Nevertheless, my colleagues' success with taped comments convinced me to experiment with live conferences where I could have a true dialogue with my students about their papers.¹⁰⁵ I decided to begin this experiment with the first assignment of the year which is ungraded.

After my first set of live conferences, I felt that the technique was very successful. I thought my comments were much more focused on the students' needs because I could ask them about their ideas as I was reacting to their writing. Often, the problem that I had identified as the main problem was not the true underlying deficiency in their reasoning process. By asking questions about the issue I thought was the root of their problem, I was able to help identify the true flaw. The give and take of our conversation helped me focus my comments on their specific problems.

However, when I received the revisions of the assignments, I was less convinced that the technique was best for me. Even though I felt just as positively about my conferences, the students, as a group, were not as able to incorporate the ideas from our conversations in their revisions as well as they had when my students received my typed comments. It was clear to me that the problem was that the students had not successfully taken notes during our conference that would help them make the necessary changes in the rewrite.

So the following year I read the papers before the conference so I could give the students some written comments about the major issues that needed to be addressed. I gave the students a copy of these comments during the conference so they could use them to take additional notes to be used in the revision. The quality of the rewrites improved, but the combination of critiquing the memos before the conference and the additional time I needed for each conference meant that I spent much more time on the drafts than I had when I typed my comments. Yet the result on the rewrites was about the same. I therefore decided to abandon the use of live conferences.

C. Going High Tech: Electronically Embedded Voice Comments

During a meeting with our Educational Technology Specialist I explained that I had decided to stop using live conferences. After listening to why I liked live conferences, she suggested that I consider using electronically-embedded voice comments.¹⁰⁶ As we talked, she convinced me that using this new technology might allow me to develop a critique technique that included some of the benefits of live conferences, but still provided my students with the necessary record of my comments to help guide their revision. I was also convinced that the concerns I had with the

limitations of taped comments would be alleviated because I could insert separate voice comments at various places in each draft and I could also copy and insert global comments as needed. Finally, she sold me on the idea when she explained that the assignment module of my course website made submission and return of the assignments with electronic critique very simple.

I must admit that initially the technology was somewhat intimidating. I had to purchase several peripherals, including an external sound card a separate microphone and a USB drive to back up the files. I had to learn how to use the voice insertion function of Microsoft Word to embed my voice comments throughout the students' drafts. I also had to learn how to use the feature to insert typed margin comments and editing suggestions. It seemed like a lot to learn.

After working on just a few papers, however, I became fairly comfortable with the technology. And my experience critiquing the first set of assignments for the class convinced me that voice comments were a good way for me to critique. It was easier for me physically than typed comments. The number of papers that I could critique in one day increased. I also felt that the substance of my comments was better than when I typed them. Overall, I felt I had the impression that I was able to provide more in-depth comments on the papers.

The main difference with the substance of my voice comments than my typed comments was that I was able to quickly provide alternative comments to the same concern. When I saw a problem in a student's paper, I would suggest what I thought was the root problem, but I would also explain what the student should consider if my understanding of the problem was incorrect. Providing alternative suggestions was more

similar to the kind of suggestions I had provided in live conferences than with typed comments. With typed comments, I usually made a decision about what the student's problem was and provided a comment based on that assumption. Although I would explain my assumption to the student, I was less willing to provide alternative suggestions. I think my unwillingness to provide different suggestions when typing the comments was two fold. First, it took a lot of time. Second, I think I felt less willing to include such conversational comments in writing. When speaking to the student through the voice comments, however, I was more willing to explain what I was unsure of and therefore provide several different suggestions.

My students also like the electronic voice comments. They seem to work with the comments more holistically and take ownership of problems much more than when I handwrote or typed my comments. Therefore, the quality of the class discussions and individual conferences and rewrites improved. I spend much less time answering questions about my voice comments than when I typed my comments. In fact, rarely does a student come into the conference and tell me that she did not understand something I said in a voice comment. With typed comments, I think about 10% of my time was spent clarifying comments during student meetings. With voice comments, when the students prepare for our meeting, they must listen to the comments and take notes on each comment. In addition, I think the fact that I provide more alternative suggestions in my voice comments helps many students think about different ways to improve their drafts. This process of summarizing my different suggestions seems to force the students to figure out on their own what point I was making in the comment. Therefore, the students are much further along in the revision process than they were with

my paper comments when they come to see me. Thus, I spend much more of my post-critique time with students discussing how the student plans to correct the problems rather than re-identifying the issues that I raised in my comments. Focusing on the rewrite rather than the comments on the draft means that the conferences are much more substantive and productive.

In addition, the student rewrites are better when I use this combination of electronic critiquing techniques. The combination of voice, short typed margin comments and editing suggestions seems to provide the right type of feedback for most students. This combination has many advantages of all critique types, including the immediacy of margin comments, the professional appearance of typed comments and the thoroughness live conferences. In many ways, voice comments give me the ability to have a conversation with the student much like a live conference, with the added benefit that I have time to reflect on my comments and the student is able to take sufficient notes on my suggestions because the student can listen to the comments several times.

D. Technical Glitches Force Another Change: Digital Voice Recorder

Overall, I think the best technique for my critique is to embed voice comments in student drafts and supplement them with some short typed margin comments and editing changes. I think ability for the students to read their papers and hit an icon in the text to hear my comment provides immediacy to the feedback that is very helpful. However, I have experienced some serious technical problems with the technology when using voice-embedded comments with Microsoft Word. The size of the files seems to cause problems when transferring files from my hard disk to the back-up disk or the website. Several times, the voice comments have been corrupted during this transfer process.¹⁰⁷

Although we have been able, eventually, to obtain the corrupted files from my original copy, the administrative burden of transferring papers more than once persuaded me to record my comments using a digital voice recorder.¹⁰⁸

Using a digital voice recorder to give my comments provides many of the same benefits of embedded voice comments without the technical problems of large files.¹⁰⁹ I now record my comments on the digital voice recorder. The digital recorder assigns a number to each comment, so I place the number of the comment in the student's paper by inserting a comment with Microsoft Word. This technique still allows me to give as many individual comments as I want on each paper and to insert the reference to the comment where appropriate on the student paper. However, when returning the papers, the digital recorder comments are separate from the student's paper. The students receive their critiqued paper and the various voice comments in one folder. When working through my comments, they must read their paper and then listen to the relevant voice comment.

Although I prefer the immediacy of embedding the voice comments in the student's draft, there are advantages to the digital recorder comments. The digital recorder is completely portable and about the size of cell phone so I am able to get up from my computer when recording my comments. Being able to make comments while walking around the room has had a positive affect on the substance of my comments. I think my digital recorder voice comments are even more conversational than the comments I made with Microsoft Word. The conversational nature of my comments seems to please my students and help them work with my comments in the revision

process. In addition, transferring the files is much easier because the comments can be “zipped” and take very little memory.

V. Mastering the Technology for Electronic Critique

Although learning the different electronic critique formats may seem intimidating, current technology is user friendly and makes giving electronic feedback fairly easy. The small investment of time to master the technology should pay off on the first set of papers the teacher critiques. To ensure a smooth transition, however, there are a few basic steps the teacher needs to undertake. The teacher must have a system for electronic submission and return of the papers. In addition the teacher must determine the best method to provide and back up the electronic feedback.

A. Electronic Submission and Return of Student Papers

Electronic critique allows the teacher to receive and return student assignments electronically. Two of the easiest ways to accomplish electronic assignment submission and return are course websites and e-mail. However, with both types of electronic submissions, the teacher must take some precautions to assure that students submit the correct document and that personal information is removed on assignments graded anonymously.¹¹⁰

1. Website Submission

Most of the current course websites include a function for assignment submission and return.¹¹¹ Students enrolled in the course sign on to the website and post their assignments. The teachers then download the assignments from the website and can manipulate them as they wish. When the teacher has commented on the paper, the teacher posts the assignment back to the website and the student downloads the critiqued

assignment from the site. To use website submission in courses graded anonymously, there must be a website for assignment submission where students use their exam or student number to obtain access to the website.

In addition to the ease of submission and return, using website submission creates an automatic record of submission time and provides an automatic back-up of the students' papers and the teacher's comments. Some course website assignment features allow the student to request an e-mail submission receipt verifying the date and time of submission. Furthermore, teachers and students may obtain access to the assignments anywhere they have internet access. Finally, most websites can handle large file transfers, so the size of the documents is not a problem when using website submission¹¹².

2. Email Submission

For some teachers, email submission and return may be the easiest method of obtaining and returning student papers because the system is already set up for all teachers and all they have to do is ask students to send an email with the document attached. This may be the best option for small classes if the teacher chooses a form of electronic critique that does not create large files. Large files can be difficult to send via email and some email systems limit the size of files that can be sent through the system. In addition, teachers who grade anonymously would need to have students send assignments via e-mail to a third party. The third party would download the assignments, remove all personal information from the documents, if necessary,¹¹³ and forward the documents to the teacher.

3. Submission Precautions: Submission Errors and Document Information

With electronic submission, teachers must establish procedures to avoid submission of wrong documents and to remove personal information on documents if the assignments are graded anonymously. Because it is possible that students could submit the wrong document when using electronic submission, they must be instructed to carefully verify that the correct version of their assignments is being submitted electronically. Most students are accustomed to submitting important documents on-line, including law school applications, so verifying that they are uploading the correct document is not new.¹¹⁴ Furthermore, lawyers in practice must verify that they are submitting the correct version of all documents when distributing transaction documents or filing papers electronically with courts and administrative agencies.¹¹⁵

For anonymously graded assignments, the teacher also must take some precautions to ensure that identifying information is not included on the assignments submitted.¹¹⁶ There are several techniques to remove personal information from documents produced with word processing applications, but none has proved completely successful. Thus, a multi-step check is probably best to ensure that the teacher does not receive documents with personal information. To begin, teachers should have students use a template that the teacher prepares for each assignment. The teacher should post the template on the website for students to download and use to draft their assignments. On this template, the teacher should provide the heading and basic formatting for the document and select the option to remove all personal information when the document is saved. Even when this option is selected, some documents may still include personal information when the document is sent by e-mail or uploaded to a website. Therefore, a third party should download the assignments and check each one to remove any personal

information.¹¹⁷ After all the documents have been checked, the teacher can obtain the documents from the third party.

4. Assignment Return

If using email, return is as simple as sending each student an email with the critiqued assignment and any accompanying documents, attached to the message. Using the website is easy as well. The website applications allow the teacher to post the critiqued assignment and any accompanying files to student folders. Most applications include a release date function, so the assignments can be posted as they are completed, but released to the students at the same time. Some applications also include a grading component where the grade on the assignment can be posted on the website when the student's paper is released. Each student only has access to his paper and grade.

B. Using Electronic Critique Functions of Word Processing Applications

1. Electronic Typed Comments and Editing Changes

The comment feature of Microsoft Word and other word processing applications makes providing typed margin and summary comments and editing suggestions very easy. To make all three types of comments, the user needs to begin by adding the reviewing toolbar. To add the reviewing toolbar, click "View," highlight "Toolbars" and select "Reviewing." Once the reviewing toolbar is added, the user should select the track changes option when beginning to critique a student paper.¹¹⁸

To provide a margin comment, the user simply highlights the relevant text and clicks "insert comment."¹¹⁹ An icon will appear with the initials of the user and a new window will appear at the bottom of the page in the reviewing pane. The user types the comment in the new window and can make changes to the comment as often as

necessary. In addition, the user may select the print view format in the View toolbar and the comment will appear as a balloon in the margin next to the text. If balloon comment is longer than will fit in the margin, Microsoft Word automatically continues the comment in a new window in the reviewing pane.

For longer summary comments, the teacher may use the insert comment feature at the beginning or end of the section, or the teacher can simply insert the comment into the student's text by moving her cursor to the appropriate location and typing the comment. The track changes feature will highlight the new typing as a change to the student's text so the student will know that the new text is a comment from the teacher.¹²⁰

To make the use of master comments efficient, the user can use the autotext function. AutoText allows the user to save and reuse comments that the teacher may want to use on other student papers. To save a comment with autotext, the user must highlight the relevant text, click Insert, then AutoText, then New. A dialog window will appear asking the user to name the autotext entry. The teacher should select a name that easily identifies the comment. The next time the teacher wishes to insert the comment, all the teacher has to do is to type the name of the comment and the autotext comment will appear. The teacher then presses enter and the autotext comment is inserted. The teacher can then revise the autotext comment, if necessary.¹²¹

To make editing changes, the user must select "track changes" in the toolbar when beginning the critique of a paper.¹²² All changes made by the teacher are then automatically tracked by the program so the student can see the editing changes that have been made.

The students may review the comments in several ways. By placing his cursor over the comment icon, the comment will pop up in a separate window. In addition, the student may select the print view or markup in View to have the comments appear as balloon comments in the margins or in the reviewing pane at the bottom of the page. Finally, the student can opt to print the paper with the comments.

2. Electronic Voice Comments Embedded in Student Paper

Adding voice comments with the comment feature of Microsoft Word is very easy. First the user must add the voice comment function to the toolbar.¹²³ Then, to add a voice comment, the user highlights the relevant text and clicks the voice comment button and an icon is displayed with recording controls.¹²⁴ The only thing the user needs to keep in mind is that the comment will only record for one minute each time the record button is clicked. The comment may be longer than one minute, but at the end of each minute, the record button must be clicked again.

To ensure good recordings, a quality sound card and microphone should be used. Although a sound card of the quality necessary for digital music recordings is not required, something better than the basic sound card provided in most laptops is probably necessary to ensure that the recorded comments will be clearly heard by the listener.

The other challenges with the voice imbedded comments occur because of the size of the files. Even with a just a few voice comments, the documents take a lot of memory. Therefore, transferring the files for back up and student return is challenging. Transferring such large files may not be possible via email because any e-mail systems limit the size of files that can be transferred. But even if the system does not limit transfer, very large files are often too cumbersome to successfully send by e-mail.

Therefore, some other method of transfer must be used. Uploading such large files to websites may not be possible with home internet connections, even high-speed connections such as DSL or cable. Therefore, backing up and transferring the files may be best by some use of hardware, such as a USB drive or external hard disk. Uploading to websites is best from the law school's high-speed internet connection.

3. Removing Teacher's Personal Information from Comments and Changes

Many teachers grade and critique assignments over a long period of time, from several days to a few weeks. If the teacher would prefer that the students not be able to determine the date that the teacher read the students' papers, the teacher should remove all identifying information from the comments.¹²⁵

4. Digitally Recorded Comments with Electronic Margin and Editorial Comments

Using a stand-alone digital recording device is another way to provide voice comments. The digital recorders are similar to tape recorders, fairly inexpensive and easy to use. The devices record onto small disks and the user may transfer the recordings as MP3 files to a personal computer or other device that can play MP3 files. Although the teacher cannot imbed the comments recorded with a digital recorder in the students' papers because the digital recorder's software does not interface with word processing applications, the teacher can use the device to record a set of comments for each student assignment.

For each assignment, the teacher records the comments and the voice recorders automatically number each comment, so the teacher must physically insert the number of the comment on the student's paper. Typing the number on the student paper is easy to do using the insert comment feature from the word processing application.¹²⁶

Once a teacher has completed a student's paper, the teacher must transfer the comments from the voice recorder to a back-up location. Each numbered comment is transferred as a separate MP3 file. At this point in the process the teacher is able to add the name or student number to the comments. The best way to do this is to name a folder with the student's identifying information and transfer the comments from the voice recorder to that folder. As a safeguard, the teacher could record the name or student number as the first comment for each paper and place it on the top of the student paper.

The teacher can place the student's paper with the electronic margin comments and editing changes in the same folder as the voice comments. The folder for each student can easily be "zipped" for transfer.¹²⁷ Transferring zipped folders by email or uploading the folders to websites using any high speed connection, home or office, is easily accomplished.

5. Clarifying Electronic Voice Comments in Advance of Student Meetings

When using any kind of electronic voice comments, the teacher will face the same challenges during conferences that were discussed above regarding taped comments.¹²⁸ However, electronic voice comments do allow an easy method for teachers to quickly listen to their comments in preparation for student meetings. Sometimes a student may contact the teacher because the student unable to understand a comment due to technical problem or because of the substance of the comments. The teacher can have the student copy the voice comment and send it by e-mail with the student's specific questions.¹²⁹ Having the student send the specific comment to the teacher with focused questions allows the teacher to either explain the comment or respond to the questions by e-mail or wait to discuss the comment and questions with the student during the meeting.

VI. Conclusion

Guiding student learning by commenting on their writing is a central part of the mission of teaching the law effectively. Law professors must focus on the substance of their comments, but must also recognize that the mechanics of how they critique their students' writing is important because it affects the substance of their feedback. While traditional hand-copy techniques may have benefits, some form of electronic feedback is probably necessary to effectively, efficiently and practically provide the type of critique that is needed in most law courses. Teachers should embrace technology and begin to consider the different electronic modes of critique that will allow them to use the most effective method for them to provide the best quality feedback possible to their students.

*The American architect, Louis Sullivan, coined the phrase that "form follows function" as an aesthetic credo. The full quote expresses the idea more completely:

It is the pervading law of all things organic and inorganic,
of all things physical and metaphysical,
of all things human and all things super-human,
of all true manifestations of the head,
of the heart, of the soul,
that the life is recognizable in its expression,
that form ever follows function. This is the law

Louis Sullivan, *The Tall Office Building Artistically Considered*, LIPPINCOTT'S MONTHLY MAGAZINE, Mar. 1896, at 403.

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¹ See, e.g., Linda L. Berger, *Applying New Rhetoric to Legal Discourse: The Ebb and Flow of Reader and Writer, Text and Context*, 49 J. LEGAL EDUC. 155, 177, 179 (1999) [hereinafter Berger, *Applying New Rhetoric*]; Jane Kent Gionfriddo, *The "Reasonable Zone of Right Answers": Analytical Feedback on Student Writing*, 40 GONZ. L. REV. 427, 429-30 (2004-05); Mary Kate Kearney & Mary Beth Beazley, *Teaching Students How to "Think Like Lawyers": Integrating Socratic Method With the Writing Process*, 64 TEMP. L. REV. 885, 897 (1991); Richard K. Neumann, Jr., *A Preliminary Inquiry into the Art of Critique*,

² Linda L. Berger, *A Reflective Rhetorical Model: The Legal Writing Teacher as Reader and Writer*, 6 LEGAL WRITING: J. LEGAL WRITING INST. 57, 57 (2000) [hereinafter Berger, *Rhetorical Model*]; Anne Enquist, *Critiquing and Evaluating Law Students' Writing: Advice from Thirty-Five Experts*, 22 SEATTLE U. L. REV. 1119, 1125-29 (1999) [hereinafter Enquist, *Advice from Experts*]; Anne Enquist, *Critiquing Law Students' Writing: What the Students Say Is Effective*, 2 LEGAL WRITING: J. LEGAL WRITING INST. 145 (1996) [hereinafter Enquist, *What Students Say*]; Steven J. Johansen, "What Were You Thinking?": *Using Annotated Portfolios to Improve Student Assessment*, 4 LEGAL WRITING: J. LEGAL WRITING INST. 123, 125 (1998). Ass'n of Legal Writing Dirs. & Legal Writing Inst., 2006 Survey Results, available at <http://www.lwionline.org/survey/surveyresults2006.pdf> [hereinafter ALWD/LWI 2006 Survey] (Responses to questions 53 and 54 show that the average legal writing teacher provides feedback on 1,204 pages of student writing each year); see Gionfriddo, *supra* note 1, at 441 n.55 (discussing the 2004 ALWD/LWI Survey Highlights); see also Jo Anne Durako, *A Snapshot of Legal Writing Programs at the Millennium*, 6 LEGAL WRITING: J. LEGAL WRITING INST. 95, 107-09 (2000) (using the results of the 1999 ALWD/LWI Survey to compare the workload of legal writing and doctrinal teachers).

³Most often, teachers should prioritize their critique by focusing the comments on draft assignments on analysis and basic organization, leaving comments on basic writing issues for final drafts. Barnett, *Triage in the Trenches of the Legal Writing Course: The Theory and Methodology of Analytical Critique*, 38 U. TOL. L. REV. 651, 654-59 (2007) (explaining that comments on draft assignments should focus on substantive issues); Berger, *Rhetorical Model*, *supra* note 2, at 72-76 (explaining that teachers must first help students develop their ideas); Gionfriddo, *supra* note 1, at 437 n.37 ("[L]aw practice writing . . . depend[s] upon accurate and precise analysis based on legal authority; thus, in giving comments in either context, a teacher does the student, and ultimately the legal profession, a serious disservice if she does not correct fundamental errors in the student's legal analysis."); Kearney & Beazley, *supra* note 1, at 898 (explaining that teachers should focus on analytical comments in earlier drafts); see, e.g., Neumann, *supra* note 1, at 744-45 (explaining that an important goal of critique is to develop ideas); Carol McCrehan Parker, *Writing Throughout the Curriculum: Why Law Schools Need It and How to Achieve It*, 76 NEB. L. REV. 561, 568-73 (1997) (explaining that teachers must help students with their understanding of the underlying legal analysis at the draft stage in order for students to produce clearly written final documents).

⁴For a discussion of providing analytical critique, see Barnett, *supra* note 3, at 659-74.

⁵See, e.g., Barnett, *supra* note 3, at 669-70 (explaining importance of mechanics of critique); Christina R. Heyde & Susan E. Provenzano, *E-Grading: The Pros Cons of Paperless Legal Writing Papers*, 12 PERSP.: TEACHING LEGAL RES. & WRITING 139 (2004) (explaining that changing from a handwritten critique format to electronic critique allows "more time to focus on substance of the critique).

⁶ See Joan MacLeod Heminway, *Caught in (or on) the Web: A Review of Course Management Systems for Legal Education*, 16 ALB. L. J. SCI. & TECH. 265, 280-89 (2006) (exploring reasons technology is not used more in legal education); Rogelio Lasso, *From the Paper Chase to the Digital Chase: Technology and the Challenge of Teaching 21st Century Law Students*, 43 SANTA CLARA L. REV. 1, 48-52 (2002) (explaining why technology should be used to enhance learning in law school); see also Suzanne Ehrenberg, *Legal Writing Unplugged: Evaluating the Role of Computer Technology in Legal Writing Pedagogy*, 4 LEGAL WRITING: J. LEGAL WRITING INST. 1, 2-3 (1998) (noting in 1995 that technology had not enhanced legal writing instruction).

⁷ Heyde & Provenzano, *supra* note 5, at 140 ("Hands down, the most persuasive reason to move to a[n] [electronic critique] is for convenience and efficiency.").

⁸ In a 1999 survey of experienced legal writing professors, all 37 respondents indicated that they hand wrote margin comments on student papers. Apparently, only one had "experimented" with electronic

comments. See Enquist, *Advice from Experts*, *supra* note 2 at 1137, 1143. See, e.g., Ehrenberg, *supra* note 6, at 4.

⁹ See *supra* note 8 and accompanying text.

¹⁰ Enquist, *Advice from Experts*, *supra* note 2, at 1119 (explaining that most new law teachers provide feedback to student writing in a manner similar to which they commented on documents in practice).

¹¹ Enquist, *Advice from Experts*, *supra* note 2, at 1137-38.

¹² See Barnett, *supra* note 3, at 662; Parker, *supra* note 3 at 582-83.

¹³ E.g., Berger, *Rhetorical Model*, *supra* note 2, at 84-90 (explaining that targeted margin comments are important to student learning); Heyde & Provenzano, *supra* note 5, at 141; Parker, *supra* note 3, at 582-83.

¹⁴ Students seem to respond positively to the use of editing changes to illustrate a point in a written comment. See Enquist, *What Students Say*, *supra* note 2, at 178. However, legal writing professionals do not agree on whether editing student work is an effective critique method. For a discussion of editing student work, see Enquist, *Advice from Experts*, *supra* note 2 at, 1156-62; Beth Cohen et al., *Matching Goals and Methodologies: Commenting on Student Writing*, 14(1) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Nov. 1999 at 2-3, available at <http://www.lwionline.org/publications/seconddraft/nov99.pdf>; Steven D. Jamar, *Written Feedback on Student Writing*, 14(1) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Nov. 1999, at 3, available at <http://www.lwionline.org/publications/seconddraft/nov99.pdf>; Kathleen Elliott Vinson, 14(1) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Nov. 1999 at 10-11, available at <http://www.lwionline.org/publications/seconddraft/nov99.pdf>.

¹⁵ For a discussion of the advantages of summary comments at the end of sections in student papers and at the end of the entire paper, see Barnett, *supra* note 3, at 666-67; Enquist, *Advice from Experts*, *supra* note 2, at 1134-1136.

¹⁶ See, e.g., Ehrenberg, *supra* note 6, at 5 (explaining that typed comments make it too easy to write more than necessary).

¹⁷ For a discussion of the importance of prioritizing comments to student papers, see Barnett, *supra* note 3, at 654-659; Enquist, *Advice from Expert*, *supra* note 2, at 1130-32; Kearney & Beazley, *supra* note 1, at 898.

¹⁸ Enquist, *Advice from Experts*, *supra* note 2, 1144-45 (explaining that using margin comments to interact with the paper helps teachers stay engaged because the comments are like a conversation with the student).

¹⁹ However, not all students benefit from a chronological reaction to the issues in their papers. For a discussion of the benefits of using chronological narrative comments versus summary comments at the ends of sections, see Barnett, *supra* note 3, at 662-63.

²⁰ Enquist, *Advice from Experts*, *supra* note 2, at 1140; Deborah Shore, *Let's Talk About It*, 14(1) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Nov. 1999 at 8-9, available at <http://www.lwionline.org/publications/seconddraft/nov99.pdf>.

²¹ For a discussion of determining the analytical problems in student writing, see Barnett, *supra* note 3, at 661-63; Enquist, *Advice from Experts*, *supra* note 2, at 1130.

²² For a discussion of the limitations of handwritten margin comments, see Barnett, *supra* note 3, at 669-70.

²³ Professor Jane Gionfriddo explained:

[M]argin/interlinear comments do “fragment” the memo for the student in that they tend to focus the student on individual strengths and weaknesses. They do this both physically and analytically. Writing in the margin may hinder the revision process by being a kind of physical or psychological barrier to the student's interaction with what he or she originally wrote. It's difficult to work with a memo when all over every page the professor has written multiple comments, crossed out ideas, and used arrows to insert ideas.

Enquist, *Advice from Experts*, *supra* note 2, at 1140 (quoting Professor Jane Gionfriddo). For this reason, using margin comments, in whatever form, may not be the best technique depending on the type of problems the teacher identifies in the student's paper. In some situations, summary comments at the ends of sections in a paper or one narrative comment to the entire assignment might be a better vehicle for the teacher to help the student with the revision. For a discussion of the substantive consideration that should be used when determining if individual margin comments or summary-type comments should be used, see Barnett, *supra* note 3, at 661-63, 666-67, 670-71.

²⁴ Enquist, *What Students Say*, *supra* note 2, at 177 (discussing student reaction to illegible comments).

²⁵ Enquist, *Advice from Experts*, *supra* note 2, at 1143-44 (explaining use of “master comment” sheets); Johansen, *supra* note 2 at 130-31 (discussing the use of checklist comments); Cohen et al., *supra* note 14; Jamar, *supra* note 14.

²⁶ For a discussion of the use of global comments, see Barnett, *supra* note 3, at 671. For a discussion of “keying” global comments to student papers, see Cliff Zimmerman, *Keyed Comment Sheets*, 14(1) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Nov. 1999 at 19, available at <http://www.lwionline.org/publications/seconddraft/nov99.pdf>.

²⁷ See *supra* note 20 and accompanying text.

²⁸ See *supra* note 23 and accompanying text.

²⁹ See Joel Schumm, *Not Just for New Teachers: Making Technology Work for You and Your Students*, 18(1) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Dec. 2003 at 20, available at <http://www.lwionline.org/publications/seconddraft/dec03.pdf>.

³⁰ Schumm, *supra* note 29. Hazel Weiser, *Using the Autotext Feature of Microsoft Word to Create a Catalog of Writing Comments*, 14(1) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Nov. 1999 at 17-18, available at <http://www.lwionline.org/publications/seconddraft/nov99.pdf> (Professor Weiser notes that with typed comments her, “[I]ntelligence does not get twisted into shorthanding what should be a more comprehensive response to a student's effort. Instead, I get to use my intelligence to craft effective analysis and concise explanations.”). Professors Heyde and Provenzano noted the following difference between handwritten and typed comments:

With paper grading, we always felt limited in our ability to write intelligent comments in the margins of papers. As a result, we often wrote short comments in the margins and tried to elaborate on those comments in notes at the ends of papers, with pages separating important explanations from corresponding writing problems. Electronic “margin notes” present our comments with more context and precision, because the computer associates each electronic margin note (written as Microsoft Word “comments”) with a precise place in the document.

. . . Scrawled quickly and cramped, our handwritten margin comments could be, at worst, cryptic, illegible, or both, especially near the end of a full day's grading. At best,

our handwritten comments were incomplete. Unfettered by poor handwriting or scarce margins, our electronic margin notes can neatly provide more detailed illustrations and clarify the “why” behind our comments.

Heyde & Provenzano, *supra* note 5, at 141 (citations omitted). For a discussion of why in-depth comments are important, see Barnett, *supra* note 3, at 663-66; Enquist, *What Students Say*, *supra* note 2, at 160-66.

³¹ Ehrenberg, *supra* note 6, at 4 nn.6-7, 5 n.9 (explaining the risk of writing comments that are too long when typing feedback).

³² See *supra* notes 25-26 and accompanying text.

³³ For a discussion of how to use the auto text feature of Microsoft Word to insert macro comments, see *infra* notes 120-121 and accompanying text.

³⁴ See Heyde & Provenzano, *supra* note 5, at 140-41; Sarah E. Ricks, *Using Macros to Comment on Student Writing: A Little Technology Can Improve Consistency, Quality and Efficiency*, 19(1) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Dec. 2004 at 8, available at <http://www.lwionline.org/publications/seconddraft/dec04.pdf>; Schumm, *supra* note 29, at 20.

³⁵ For a discussion of the benefits of using the macro comment feature of word applications, see Ricks, *supra* note 34, at 8; Laurel Currie Oates, *The Paperless Writing Class* 15(2) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Jun. 2001 at 18, available at <http://www.lwionline.org/publications/seconddraft/jun01.pdf>; Weiser, *supra* note 30, at 17-18; Heyde & Provenzano, *supra* note 5, at 140 (explaining that the use of master comments “eliminates the need to sift through previous papers to recall exactly how” a similar comment was phrased to other students).

³⁶ For a discussion of the benefits of reinforcing ideas throughout the critique, see Barnett, *supra* note 3, at 668.

³⁷ See Mary Beth Beazely, *Better Writing, Better Thinking: Using Legal Writing Pedagogy in the “Casebook” Classroom (Without Grading Papers)*, 10 LEGAL WRITING: J. LEGAL WRITING INST. 23, 56, 77-78 (2004). See also Jamar, *supra* note 14, at 4 (using live editing on a couple paragraphs of student drafts).

³⁸ See Johansen, *supra* note 2, at 145.

³⁹ See Gionfriddo, *supra* note 1, at 438 n.41; Johansen, *supra* note 2, at 142.

⁴⁰ See Jamar, *supra* note 14, at 4.

⁴¹ Johansen, *supra* note 2, at 145 (explaining that live conferences are time consuming).

⁴² Efficiency is critical to legal writing teachers, see ALWD/LWI 2006 Survey, *supra* note 2, at 37-40 (responses to questions 53 and 54 show that the average legal writing teacher provides feedback on 1,204 pages of student writing each year).

⁴³ For a discussion of using recorded comments, see Elisabeth Keller, *Audiotaped Critiques of Written Work*, 14(1) THE SECOND DRAFT: BULL. LEGAL WRITING INST., Nov. 1999 at 13-14, available at <http://www.lwionline.org/publications/seconddraft/nov99.pdf>.

⁴⁴ See *supra* notes 36-39 and accompanying text.

⁴⁵ See Keller *supra* note 41.

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- ⁴⁶ For a discussion about different styles of commenting on student writing, see *supra* notes 15-23 and accompanying text.
- ⁴⁷ For a discussion of the importance of prioritizing comments see *supra* note 17 and accompanying text.
- ⁴⁸ For a discussion of the importance of the tone of critique, see Barnett, *supra* note 3, at 672.
- ⁴⁹ For a discussion of how to use the features in Microsoft Word that allow insertion of comments and editing changes, see *infra* notes 118-122 and accompanying text.
- ⁵⁰ Heyde & Provenzano, *supra* note 5, at 141 (observing that “Electronic ‘margin notes’ present...comments with more context and precision, because the computer associates each electronic margin note...with a precise place in the document.”).
- ⁵¹ For a discussion of inserting comments with Microsoft Word, see *infra* notes 119-120 and accompanying text.
- ⁵² See *supra* notes 11-13 and accompanying text.
- ⁵³ See Heyde & Provenzano, *supra* note 5, at 140.
- ⁵⁴ For a discussion of the benefits of providing editing changes with comments, see *supra* note 14 and accompanying text.
- ⁵⁵ For directions on how to track editing changes with Microsoft Word, see *infra* note 122 and accompanying text.
- ⁵⁶ Heyde & Provenzano, *supra* note 5, at 140.
- ⁵⁷ For a discussion of electronic submission and return of assignments, see *infra* notes 111-117 and accompanying text.
- ⁵⁸ For a discussion of preserving anonymity, see *infra* note 116-117 and accompanying text.
- ⁵⁹ For a discussion of course websites, see Heminway, *supra* note 6, at 290-309.
- ⁶⁰ For a discussion of inserting voice comments using Microsoft Word, see *infra* notes 123-124 and accompanying text.
- ⁶¹ For a discussion of the benefits of precisely targeted comments, see *supra* notes 11-13 and accompanying text.
- ⁶² For a discussion of editing documents using the Track Changes feature in Microsoft Word, see *infra* notes 118-122 and accompanying text.
- ⁶³ For a discussion concerning taped comments, see *supra* notes 43-48 and accompanying text.
- ⁶⁴ For directions on copying and pasting voice comments in Microsoft Word, see *infra* note 129.
- ⁶⁵ For a discussion of assignment submission and return electronically, see *infra* notes 111-117 and accompanying text.
- ⁶⁶ For a discussion of backing up student papers with electronic critique, see *infra* notes 124-125 and accompanying text.

⁶⁷ For a discussion on using a digital voice recorder to make comments, *see infra* notes 125-128 and accompanying text.

⁶⁸ For directions on inserting comments in Microsoft Word, *see infra* note 119 and accompanying text.

⁶⁹ However, the digital recorder changes the number of all the comments following the newly inserted comment. Changing the number of subsequent comments requires the teacher to change all the corresponding numbers on the student draft. Therefore, I have found that it is easier to simply record a new comment at the end of the voice comments and insert that number at the appropriate place in the student draft, even though the student will have to jump forward in the recorded comments to hear the correct comment. So, the comments on the student paper may not be chronological.

⁷⁰ For a discussion of “zipping” voice comments, *see infra* note 127.

⁷¹ For a discussion of the instability of voice-embedded comments, *see supra* notes 66-67.

⁷² For a discussion of the limitation of voice-embedded comments, *see supra* notes and 66-67.

⁷³ For a discussion of returning student papers with voice comments recorded with digital recorders, *see infra* notes 126-128 and accompanying text.

⁷⁴ *E.g.*, Barnett, *supra* note 3, at 663-66 (discussing amount of detail necessary for comments to provide adequate analytical guidance on draft assignments in first-year legal writing course); Gionfriddo, *supra* note 1, at 434-38 (discussing importance of guiding first-year students to accurate analysis in comments to draft student papers); Neumann, *supra* note 1, at 766 (noting that the goal of critique on drafts should be to assist the students with analytical issues).

⁷⁵ *See* Philip C. Kissam, *Thinking (By Writing) About Legal Writing*, 40 VAND. L. REV. 135, 168-70 (1987) (encouraging use of drafts and rewrites of writing assignments throughout the law school curriculum to help students with their understanding of the analysis).

⁷⁶ For a discussion of how critique should be tailored to the analytical challenges of the problems and timing of the assignment, *see* Barnett, *supra* note 3, at 660; Gionfriddo, *supra* note 1, at 453-55; Johansen, *supra* note 2, at 127.

⁷⁷ Kearney & Beazley, *supra* note 1, at 897.

⁷⁸ Barnett, *supra* note 3, at 662-63 (discussing that the critiquing process is different for each teacher); Berger, *Rhetorical Model*, *supra* note 2, at 582-83.

⁷⁹ *See, e.g.*, Maria Perez Crist, *Technology in the LRW Curriculum: High Tech, Low Tech, or No Tech*, 5 LEGAL WRITING: J. LEGAL WRITING INST. 93, 106 (1999) (noting that reading from screen is often slower than text); Heyde & Provenzano, *supra* note 5, at 145 (noting that reading from screen is often slower and affects overall comprehension).

⁸⁰ *See, e.g.*, Ehrenberg, *supra* note 6, at 7 (noting that reading from screen often prevents large-scale comprehension); Lucia Ann Silecchia, *Of Painters, Sculptors, Quill Pens and Microchips: Teaching Legal Writers in the Electronic Age*, 75 NEB. L. REV. 802, 817(1996) (noting that reading from screen focuses reader on small sections of text).

⁸¹ *See, e.g.*, Ehrenberg, *supra* note 6, at 5, 7; Heyde & Provenzano, *supra* note 5, at 145; Molly Warner Lien, *Technocentrism and the Soul of the Common Law Lawyer*, 48 AM. U. L. REV. 85, 104 (1998); Silecchia, *supra* note 80, at 817.

⁸² Professors Heyde and Provenzano make several suggestions to help avoid these problems, see Heyde & Provenzano, *supra* note 5, at 145. Teachers can print out any paper that needs special attention and read it from the hard copy to give the teacher the necessary “bird’s eye” view of the paper. *Id.* Teachers also should take special care in class and student meetings to keep students focused on large-scale issues in assignments. *Id.* Similarly, teachers should encourage students to print out their papers several times during the writing and revision process to help the students focus on large-scale issues. *Id.*

⁸³ See Tracy L. McGaugh, *Generation X in Law School: The Dying of the Light or the Dawn of a New Day*, 9 LEGAL WRITING: J. LEGAL WRITING INST. 119, 143 (2003) (noting that many students now entering law school are more accustomed to reading non-print resources).

⁸⁴ Heyde & Provenzano, *supra* note 5, at 145.

⁸⁵ See, e.g., Lasso, *supra* note 6, at 1, 3 (2002) (noting in 2002 that in a few years all entering law students will have had access to computers and the internet their entire lives); Heminway, *supra* note 6, at 283-89 (explaining that to be successful, legal educators must take into account that current law students have used technology their entire lives); McGaugh, *supra* note 83, at 124-25; Silecchia, *supra* note 80, at 808 (noting that current law students have used technology at all levels of their education); Craig T. Smith, *Synergy and Synthesis: Teaming “Socratic Method” with Computers and Data Projectors to Teach Synthesis to Beginning Law Students* 7 LEGAL WRITING: J. LEGAL WRITING INST. 113, 114 (2001) (noting that many students expect technology to be used in teaching). For a discussion of the benefits and disadvantages of using technology in teaching law, see Crist, *supra* note 79, at 97-100.

⁸⁶ For a discussion of how technology affects learning in law school, see Lasso, *supra* note 6, at 22-33.

⁸⁷ Heyde & Provenzano, *supra* note 5, at 142 (noting that students prefer electronic comments over handwritten comments); Oates, *supra* note 35, at 19 (noting that students praise electronic comments). See also Crist, *supra* note 79, at 97-100 (noting that students may learn better if the teacher incorporates the use of technology in the instruction).

⁸⁸ See Heyde & Provenzano, *supra* note 5, at 142; David Kiefer & Marc Lauritsen, *Recent Developments in Automating Legal Documents*, 52 Syracuse L. Rev. 1091, 1096-97 (2002) (explaining use of technology in law practice to produce documents). For a discussion of how technology affects the way lawyers think about the law, see Molly Warner Lien, 48 American University Law Review 85, 126-33 (1998).

⁸⁹ According to the Administrative Office of the U.S. Courts, the federal judiciary’s case management and electronic case files systems are in use “in 98% of the federal courts: 93 district courts, 93 bankruptcy courts, the Court of International Trade, the Court of Federal Claims, the Court of Appeals for the 8th Circuit, and the Bankruptcy Appellate Panel for the 8th and 10th Circuits.” See About CM/ECF, http://www.uscourts.gov/cmecf/cmecf_about.html (last visited Aug. 08, 2007). See also Mary Wahne Baker, *Where There’s a Will, There’s a Way: The Practicalities and Pitfalls of Instituting Electronic Filing for Probate Procedures in Texas*, 39 Tex. Tech L. Rev. 423, 431-440 (2007) (commenting on Texas’s possible move to an almost completely electronic probate process, while viewing other states which already allow e-filing in probate); Bradley Parker et al., *The Paperless Deposition*, 20 UTAH B. J. 36 (Jan./Feb. 2007) (discussing the world’s first paperless deposition).

⁹⁰ See Crist, *supra* note 79, at 96-97 (noting that technology is defining the skills lawyers need today to be competent in practice); Heyde & Provenzano, *supra* note 5, at 142-143 (explaining that electronic commenting helps prepare students for law practice); Richard A. Matasar & Rosemary Shiels, *Electronic Law Students: Repercussions on Legal Education* 29 VAL. U. L. REV. 909, 913 (1995) (noting that law schools must use technology to prepare students for law practice); Silecchia, *supra* note 80, at 825 (noting that using technology in the classroom helps prepare students for law practice).

⁹¹ See Weiser, *supra* note 30, at 18 (noting that students feel that the teacher values their work more when using electronic comments).

⁹² For a discussion of the ease of electronic submission and return of assignments, see *infra* notes 111-117 and accompanying text.

⁹³ For a discussion of the benefits of electronic submission of assignments, see Heyde & Provenzano, *supra* note 5, at 140; Schumm, *supra* note 29, at 20.

⁹⁴ For a discussion of electronic return of assignments, see *infra* 117-118 and accompanying text.

⁹⁵ See Schumm, *supra* note 29, at 20; Heyde & Provenzano, *supra* note 5, at 142 (explaining that many students have asked why all professors do not grade electronically); Oates, *supra* note 35, at 19 (noting that her students prefer electronic grading because it results in better quality feedback); Weiser, *supra* note 30, at 18 (noting that students feel that the teacher values their work more when electronic comments are used).

⁹⁶ See, e.g., Lasso, *supra* note 6, at 43-48 (noting the benefits of using technology to promote student enthusiasm for learning); Schumm, *supra* note 29, at 20 (noting that electronic comments help interest students in the legal writing class).

⁹⁷ For a discussion of how the analytical goals of the critique affect the type of feedback that should be given, see *infra* notes 73-76 and accompanying text.

⁹⁸ For a discussion of analytical critique, see *supra* note 3 and accompanying text.

⁹⁹ See *supra* notes 8-13 and accompanying text.

¹⁰⁰ For a discussion of using hand written margin comments, see *supra* notes 8-24 and accompanying text.

¹⁰¹ For a discussion of using typed comments, see *supra* notes 26-36 and accompanying text.

¹⁰² For a discussion of using “master comments,” see *supra* notes 32-36 and accompanying text.

¹⁰³ For a discussion of using “global comments,” see *supra* notes 25-26 and accompanying text.

¹⁰⁴ For a discussion of using annotated samples, see Judith B. Tracy, “*I See and I Remember; I Do and Understand*”: *Teaching Fundamental Structure in Legal Writing Through the Use of Samples*, 21 *TOURO L. REV.* 297, 330-31 (2005).

¹⁰⁵ For a discussion of live conferencing, see *supra* notes 36-42 and accompanying text.

¹⁰⁶ For a discussion of using voice-embedded comments, see *supra* notes 60-67 and accompanying text.

¹⁰⁷ For a discussion of technical challenges when using voice-comments in Microsoft Word, see *supra* notes 64-66 and accompanying text.

¹⁰⁸ For a discussion of using digital recorders to record voice comments, see *supra* notes 67-73 and accompanying text.

¹⁰⁹ See *supra* note 107 and accompanying text.

¹¹⁰ For information regarding the submission of incorrect documents, see *infra* notes 114-115 and accompanying text. For assistance in assuring that personal information is removed, see *infra* notes 116-117 and accompanying text.

¹¹¹ For a discussion of course websites, see Heminway, *supra* note 6.

¹¹² For a discussion of the problems caused by the large amount of memory embedded voice comments use, see *supra* notes 64-66 and accompanying text.

¹¹³ For a discussion about preserving anonymity while utilizing electronic submission, see *infra* notes 116-117 and accompanying text.

¹¹⁴ In the four years that I have used electronic submissions, my students have submitted approximately 1000 assignments electronically. Only one student has uploaded the wrong version of an assignment. If a student uploads the wrong assignment, I consider it late and the student is penalized accordingly. For suggestions on dealing with students uploading the wrong document, see Heyde & Provenzano, *supra* note 5, at 144.

¹¹⁵ For example, local rules for the United States District Court for the district of Massachusetts state that a judicial officer may impose dismissal, default, or other sanctions for errors made while electronically filing documents. See LR, D.Mass 1.3 read in conjunction with LR, D.Mass 5.4.

¹¹⁶ If format of the document is not a concern, the use of exam software is another solution for submission of anonymously graded assignments. Exam applications have a function that removes all identifying information from the documents submitted by students. Most exam software can be used for take-home exams, so the teacher can allow submission over a long period of time. However, currently, most exam software alters the format of the documents submitted. Therefore, if citation form or other formatting is a concern, using exam software is not the best option.

¹¹⁷ Personal or hidden data can be removed from a document opened in Word 2007, by clicking the Microsoft Office Button, pointing to Prepare and then clicking on Inspect Document. Once inside the document inspector dialog box, you simply check the boxes that correspond to the type of information wish to search for and then click Inspect. When the search is complete, click the Remove All buttons next to the results for the types of data which you would like removed from the document. See Microsoft Office Online <http://office.microsoft.com/en-us> (click on the “Products” tab; then follow the hyperlink for “Word”; then search “Remove Hidden Data and Personal Information From Office Documents”) (last visited July 09, 2007).

¹¹⁸ For a discussion of the Track Changes feature in Microsoft Word, see *infra* notes 120-123 and accompanying text.

¹¹⁹ To insert a text comment using word 2007, select or click at the end of the text which you wish to comment on and then click on the New Comment button located on the review tab in the Comments group. From here, simply type your comment in either the new window or comment balloon that appears. See Microsoft Office Online <http://office.microsoft.com/en-us> (click on the “Products” tab; then follow the hyperlink for “Word”; then search “insert or delete a comment”) (last visited July 12, 2007).

¹²⁰ See *infra* notes 122-123 and accompanying text.

¹²¹ To revise an autotext comment in Word 2007, simply insert the comment into the document, make the desired changes, and then save the revised comment using the exact same file name. When asked if you want to redefine the building block entry, click yes. See Microsoft Office Online <http://office.microsoft.com/en-us> (click on the “Products” tab; then follow the hyperlink for “Word”; then search “create and distribute boilerplate text”) (last visited Aug. 07, 2007).

¹²² The Track Changes feature allows a student to view exactly how their paper has been edited by displaying any deletions, comments, formatting changes or moved text, inside comment balloons. In Word

2007, this feature is enabled by right clicking on the Status Bar and then clicking on Track Changes. Once this is complete a Track Changes Indicator will appear on the status bar, which can be clicked to turn the feature on or off. *See* Microsoft Office Online <http://office.microsoft.com/en-us> (click on the “Products” tab; then follow the hyperlink for “Word”; then search “Track Changes While You Edit”) (last visited July 09, 2007).

¹²³ You can add the Insert Voice function to the quick access toolbar by clicking on the Microsoft Office button, then clicking on Word Options, and then clicking Customize. From here select All Commands from the list under Chose Commands From and then select Insert Voice from the list of commands. Following this just click Add and the Insert Voice command will appear on your quick access toolbar. *See* Microsoft Office Online <http://office.microsoft.com/en-us> (click on the “Products” tab; then follow the hyperlink for “Word”; then search “insert or delete a comment”) (last visited July 12, 2007).

¹²⁴ Once the Insert Voice function has been added, you can record a voice comment by clicking on it, and then pressing the Start button located inside the dialog box that appears. When you finish recording press the Stop button, located in the same dialog box and then close the dialog box. If Word asks whether you want to update the sound object, click yes. *See* Microsoft Office Online <http://office.microsoft.com/en-us> (click on the “Products” tab; then follow the hyperlink for “Word”; then search “insert or delete a comment”) (last visited July 12, 2007).

¹²⁵ Time stamps and other identifying information can be removed from comments in Word 2007 in the same manner personal or hidden data can be removed from a document. *See Supra* note 117.

¹²⁶ For directions on how to insert numbers into a document using Microsoft Word, see *supra* note 119 and accompanying text.

¹²⁷ Zipping a file compresses it, making it considerably smaller, which conserves storage space and makes transferring the document easier. Microsoft recommends several products to accomplish this including: WinZip which can be purchased at <http://www.winzip.com/index.htm>; Stuffit which can be purchased at <http://www.stuffit.com/win/index.html>; PowerArchiver which can be purchased at <http://www.powerarchiver.com/>; PKZip which can be purchased at <http://www.pkware.com/>; PicoZip which can be purchased at <http://www.picozip.com/> and PentaZip which can be purchased at <http://www.pentazip.com/>. Links to each of these sites are provided on the Microsoft Office Online website. *See* Microsoft Office Online <http://office.microsoft.com/en-us> (Search “Zip or Unzip a File”) (last visited July 10, 2007).

¹²⁸ For a discussion of the challenges of using taped comments, see *supra* notes 47-49 and accompanying text.

¹²⁹ A student does not need to send their entire document to their teacher, rather they can just send the individual voice comment(s) which they would like to receive further clarification on. In Word 2007 this is done by selecting the icon which corresponds to the voice comment desired to be copied and then clicking the Copy button, on the home tab, located in the clipboard group. Then the student just opens the document they wish to send to their teacher, clicks on the area where they would like the items to be placed and double clicks on the corresponding icons in the Clipboard task pane. This document, complete with the pasted voice comments, can then be attached to an e-mail and sent to the teacher. When using voice recorder files the situation is even easier as the voice comment files can simply be attached individually to an e-mail in the same manner in which you would attach any document to an e-mail. *See* Microsoft Office Online <http://office.microsoft.com/en-us> (click on the “Products” tab; then follow the hyperlink for “Word”; then search “copy and paste multiple items by using the Office Clipboard”) (last visited on July 16, 2007).