

STRATEGIES TO MAXIMIZE THE IMPACT OF FEEDBACK AND STREAMLINE YOUR TIME

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ABSTRACT

To increase the efficiency (and effectiveness) of feedback, you must address four key components of the online teaching experience: 1) Course Design—Integrate course components that provide automated feedback in response to individual student submissions. 2) Instructional Resources and Activities—Create resources and activities to decrease the amount of postassignment feedback required. 3) Integration of Feedback Banks—Utilize technology to automate and manage common, repetitive feedback to free instructional time for other activities. 4) Student Experience—Increase the impact of feedback on the student learning experience to ensure adequate return on instructional time investment.

Keywords: grading, instructional time, feedback

INTRODUCTION

During lunch with a colleague, I asked about her recent venture into online teaching. She summed up her experience with two words, “Never again!” She went on to explain that, overall, she liked teaching online. Specifically, she enjoyed the challenges associated with adapting instructional strategies for the online environment, interacting in the discussion forums, and creating resources to connect with her students. But, her enjoyment of these factors was not strong enough to overcome one key burden: grading. As she explained, “There was always something to grade—hours and hours of grading and feedback—so much that I didn’t have time for other aspects of my teaching.” Simply put, she became burned out due to the time required to provide individualized feedback on so many student artifacts.

THE VALUE OF FEEDBACK

Unfortunately, when you consider the nature of online learning, my colleague’s experience is not surprising or unique. In the online classroom, there are no nonverbal or social indicators of student learning or cognitive engagement. For instructors to know that a student is present (and learning), the student must engage with the course content in a manner that leaves visible traces in the online classroom. Typically, this is done via threaded discussion, quizzes, activities, written assignments,

and/or some other individualized artifact. Course credit is then associated with the completion of each requirement to motivate students’ engagement with learning activities and assignments. Consequently, each of these student artifacts requires a grade and, assuming the goal is to promote student learning, individualized feedback.

A host of research supports the value of individualized feedback in the online classroom; elaborative feedback has the potential to increase student learning, foster engagement, and enhance satisfaction (Chickering & Ehrmann, 2008; Espasa & Meneses, 2010; Gibbs & Simpson, 2004; Mandernach, 2005, 2013; Mandernach & Garrett, 2014; Mason & Brunning, 2001; Nicol & Macfarlane-Dick, 2006). While the value of feedback on students’ artifacts is clearly established across all modes of higher education, the importance of feedback is elevated in the online environment due to the isolated situation in which students are learning. In an online course, feedback not only enhances students’ cognitive understanding of course material, but it provides a mechanism for motivation, interpersonal connection, and engagement. Recognizing the dual influence on cognitive and affective components of the learning experience, research reveals that students perceive instructor feedback as one of the most important dimensions of the online classroom (Frayser, 2014;

Ice, Kupczynski, Wiesenmayer, & Phillips, 2008; Ward, Peters, & Shelley, 2010; Yang & Cornelius, 2004; Yang & Durrington, 2010).

The challenge in providing detailed, elaborative feedback lies in the time investment required to do so. The reality for most online courses is that there is one instructor and many students (typically 15–30 students; in extreme cases, 100 or more). As one would expect, grading time is directly proportional to the number of students (Cavanaugh, 2005) along with the frequency, type, and nature of assignments (Mupinga & Maughan, 2008). In fact, research finds 40% to 60% of all instructional time in the online classroom is devoted to grading and feedback (Mandernach & Holbeck, 2016; Mandernach, Hudson, & Wise, 2013; Richard & Kuhne, 2008; Van deVord & Pogue, 2012). For online instructors to be successful, they must go beyond simply understanding best practices in effective feedback; they must develop strategies to provide high-quality feedback in an efficient manner that frees instructional time to be invested in other aspects of teaching (Mandernach, 2014).

To increase the efficiency (and effectiveness) of feedback, you must address four key components of the online teaching experience:

1. *Course Design*—Integrate course components that provide automated feedback in response to individual student submissions.
2. *Instructional Resources and Activities*—Create resources and activities to decrease the amount of postassignment feedback required.
3. *Integration of Feedback Banks*—Utilize technology to automate and manage common, repetitive feedback to free instructional time for other activities.
4. *Student Experience*—Increase the impact of feedback on the student learning experience to ensure adequate return on instructional time investment.

COURSE DESIGN

The goal of automated feedback is not to eliminate or replace individualized feedback from the instructor; rather, automated feedback provides a means of addressing known challenges so that less of your time needs to be invested correcting common (and expected) conceptual errors. The

more automated feedback you can build into your course, the less one-to-one instructional time you will need to spend providing postassignment feedback in relation to these issues.

The most common design component to provide students with automated feedback is the use of the LMS assessment tool to administer and grade tests and quizzes. Automated quizzes provide students an opportunity to test their understanding and receive instantaneous feedback. Providing verification feedback (feedback that simply indicates whether an answer is right or wrong) is easily done via formatting the feedback, but to maximize the benefits available through automated feedback, it is also important to include elaborative feedback within the quizzing system. Elaborative feedback goes beyond indicating the correctness of a student's response to provide detailed information to correct conceptual errors. While all automated feedback provides response verification, there are considerable differences in types of elaboration. Feedback elaboration typically falls into one of the following categories:

- *Informational* elaboration does not specifically address individual responses but provides a framework of relevant information from which the correct answer can be drawn.
- *Topic-specific* elaboration, in contrast, provides more specific information about the target question or topic. Topic-specific elaboration leads the learner through the correct answer, but it does not address incorrect responses.
- *Response-specific* elaboration is the most specific and direct form of feedback. Response-specific elaboration addresses both the correct answer and incorrect response choices; if a learner selects an incorrect response, response-specific feedback explains why the selected response is incorrect and provides information about what the correct answer should be.

Teaching effectiveness research (e.g., Whyte, Karolick, Neilsen, Elder, & Hawley, 1995) suggests that response-specific feedback impacts student learning more than other general forms of feedback. To ensure that your automated quiz impacts learning in a meaningful way that reduces future student misunderstandings, which will require

one-to-one feedback for you to correct, you will want to create detailed feedback for your online tests and quizzes.

While many textbook publishers provide assessment items that can be imported into the LMS to create a test or quiz, most publisher resources do not provide topic-specific or response-specific feedback. To maximize the value of feedback provided and minimize conceptual errors that you will need to address in the future, you should create detailed feedback to be provided automatically by the testing system in response to student's answers. The more detailed the feedback, the more time you will potentially save in the future by utilizing the automated system to correct students' understanding. But, as you can imagine, creating this type of detailed feedback takes time. You can start by creating detailed feedback to address the most problematic questions first (you can pinpoint this through item analysis functions in the LMS), then move on to address other questions per the frequency by which students get them wrong. Or, you can also integrate approaches to have students create feedback for you; see Table 1. for examples.

Table 1. Activities for Students to Create Feedback

<i>Test Review</i>	As a component of test review, assign each student three to five questions for which they are required to write feedback.
<i>Test Correction</i>	Following a test or quiz, allow students to earn back a portion of the points missed by creating detailed, response-specific feedback on the items they missed.
<i>Key Points</i>	As an activity to introduce students to a concept, give them each a question to create detailed feedback about.
<i>Bonus</i>	At the end of the term, offer a bonus point activity in which students can earn a set number of points for each item for which they create feedback.

Key to the effectiveness of student-generated feedback is providing students with guidelines and examples to demonstrate your expectations. It is helpful to provide students with a comparison of poor, mediocre, and good feedback to use as a model. In addition, it is important to review all student-generated feedback to ensure accuracy and relevance to the target items.

Including assignments with automated feedback as a component of graded work provides a foundation to ensure all students, regardless of

class size, receive individual feedback, but it is equally important to seek out activities that allow students to receive feedback on their understanding in a format that is not monitored or linked to course grades. Mandernach, Holbeck, and Cross (2015) offer a range of activities that provide automated feedback in response to individual student activities:

- *Pretest check*—At the beginning of each online module, include a true/false pretest that targets baseline understanding of key course information. Rather than including this as a graded component or a traditional quiz format, answers can be provided as pop-up boxes in which additional information is provided as a function of which answer is selected by the student. The pop-up text can clarify misunderstandings, point students toward the correct area of the text, or provide resource links where additional information can be found. To create a pop-up box, you will need to utilize JavaScript and input the correct code in the HTML editor of your LMS (for detailed information on this process, see JavaScript PopUp Windows at <http://www.javascript-coder.com/window-popup/javascript-popup-window.phtml>).
- *Case studies*—After students have engaged with the instructional content, incorporate a case study (either text-based or video) that allows students to select from a range of possible actions; based upon their selection, the system provides additional information on the implications of their choice in relation to the key issues or concepts in the course. As students engage with the material, they will receive feedback about how their choices impact the case study. To efficiently create an interactive, online case study, you can use decision-tree software (such as ZingTree; <https://zingtree.com/>) that allows you to structure the learning experience with various options for moving through the learning content.
- *Mastery quizzes*—Utilize the testing feature available in the LMS to provide mastery quizzes at the conclusion of each module. Unlike a regular quiz, a mastery quiz allows students to self-test

and review their knowledge of key course concepts until they meet the expected level of proficiency. Within the quiz, you can set up detailed feedback that not only verifies correct responses but provides elaborative information to help correct errors in understanding and point students toward textbook or instructional information that explains each error. While you can use a mastery quiz as a component of a grade, it is equally valuable to provide as a nongraded resource. If you want to require mastery of targeted concepts before moving on to the next instructional unit, your LMS may allow you to set a mastery score required on each quiz before the student is able to access the next content module. For example, in the Blackboard LMS, you can create adaptive release rules to restrict students' access to content until specified activities have been completed.

- *Flashcards*—A range of automated flashcard programs are available to facilitate students' mastery of course-related terminology. Integrate a flash-card program directly into the LMS to provide students the opportunity to review key vocabulary and receive immediate feedback on the accuracy of their understanding. Typically, you can integrate electronic flashcards (for example, Flashcard Machine, <http://www.flashcardmachine.com/>, or Quizlet, <https://quizlet.com/>) into your online course by either providing a link directing students to an external website hosting your electronic flashcards or by embedding the HTML code so the flashcards appear directly in your LMS.
- *Study guides*—Create electronic study guides that utilize matching activities, crosswords, game-show formats, and/or a host of other technology-mediated activities that encourage students to interact with course material in a manner that provides immediate feedback in response to student answers (for example, Jeopardy Labs, <https://jeopardylabs.com/>, or educaplay, <https://en.educaplay.com/>).

It is important to recognize that the design model utilized at your institution will dictate the

extent to which you can adjust course requirements or integrate additional activities. Online courses are typically taught under one of three general design models:

1. *Instructor-Designed*: The instructor is responsible for developing the content, activities, and assignments in their own course. In this model, the instructor has complete content control over their online course.

2. *Instructor-Supplemented*: The instructor is provided with a shared, common course shell (typically developed by a content expert in collaboration with an instructional design team); from this common core, the instructor can add or modify instructional supplements, assignments, or activities. In this model, the instructor has some flexibility over the content in their own course, but it also utilizes common content that is consistent across all course sections.

3. *Instructor-Facilitated*: The instructor is provided a complete course including instructional content, activities, and assignments. In this model, the instructor does not have control over assignments, but can offer optional activities within the context of teaching their course (most frequently seen within announcements or threaded discussions).

Depending on the design model you utilize at your institution, you may not have the flexibility to integrate required course components. This doesn't mean that you can't utilize any of these ideas, but it may require you be creative in how you offer these resources to students. For example, if you are teaching in an instructor-facilitated design model, you may need to provide links to the activities within your course announcements or in summary discussion posts. The goal is not to create additional course requirements for your students, but rather to give them additional options to review and practice course material in a manner that allows them to have immediate feedback on their understanding.

It is important to note that the creation of course design enhancements will require a considerable initial time investment. The return on this up-front investment is the ongoing time you will save by giving students opportunities to practice knowledge, identify errors, and correct understanding in a context that isn't dependent upon one-to-one, instructor-to-student feedback. But, key to seeing a return on your time investment is ensuring that all activities provide targeted, detailed feedback on

important course concepts. Poor quality automated feedback will not have the intended long-term time savings; an initial time investment dedicated to high-quality, elaborative feedback will enhance the learning experience and decrease the need for extensive postassignment feedback in relation to common conceptual errors. The integration of automated, response-specific feedback enhances student learning and satisfaction, and, key to increasing your efficiency and effectiveness, it does so in a manner that requires virtually no on-going time commitment from you.

INSTRUCTIONAL RESOURCES AND ACTIVITIES

When teaching the same class multiple times, you are likely to discover that students make relatively consistent errors. Whether these errors are in relation to conceptual mistakes, general writing concerns, or challenges with citation style, the feedback we provide to students is often repeated from one student to the next. To increase the efficiency by which you can provide feedback while still promoting high levels of engagement and learning, it is useful to integrate resources and instructional activities that address potential errors *before* they happen. By investing up-front time in the creation of one-to-many resources and activities that target the whole class, you can reduce the time spent providing repetitive, one-to-one feedback when completing postassignment grading. Three approaches for creating instructional supplements to increase the efficiency of providing feedback include: feedforward resources, peer-to-peer activities, and summative analysis.

Feedforward Resources

As faculty, we typically know what kinds of mistakes our students are going to make. For example, a common challenge for students in the social sciences is mastering APA style. Regardless of the course, assignment, or level the student, students tend to struggle with the nuances of formatting APA style citations and references. Thus, when grading assignments that require APA style, faculty will spend considerable time identifying errors and providing feedback to address these errors in the future. The challenge with this approach to postassignment feedback is that: 1) students are not always motivated to review the feedback as they have already received a grade on the assignment; 2) instructors spend

considerable time providing the same feedback to numerous students; and 3) after an instructor has graded 10, 20, 30, or more assignments that have had the same error, instructor fatigue is likely to impact the quality and quantity of the feedback provided. The result of these converging factors is that the instructor invests a considerable amount of time in the feedback process without an equivalent return in potential student learning (Mandernach, 2013).

Feedforward resources address this challenge by flipping the feedback process. Rather than waiting until a student makes the error and addressing it through assignment feedback, you identify common errors in advance of the assignment and create assignment-specific resources to guide students as they complete the assignment. The goal of feedforward information is to increase the quality of students' initial submissions to reduce the quantity of postassignment feedback required. To be effective, feedforward resources should identify common pitfalls or errors, provide tips and suggestions for success, and include specific guidance for students who need additional support.

There are many different formats for creating feedforward resources. It may be as simple as creating a text document that overviews common challenges, provides examples, and lists resources to guide development of an assignment. Or, you can start with a sample assignment and provide embedded comments that highlight various challenges along with associated support to avoid the highlighted mistakes. Even more dynamic, you can create a screencast in which you record audio and/or video of you reviewing a sample paper as you mock grade and provide feedback to the paper on the screen (for example, see Sample Grading of an Essay, <https://www.youtube.com/watch?v=KSD8z26PMm4>). Regardless of the format you use, be sure to create feedforward resources that are specific to the assignment and provide actionable guidance for students. Further, to maximize the return on your investment of time, be sure that you save all feedforward resources in a format that allows you to update and reuse from term to term or class to class.

Peer-to-Peer Activities

While instructor feedback is vital to effective learning, you can reduce students' sole reliance

on instructor-generated feedback by integrating opportunities for peer-to-peer feedback. Peer review provides a forum for students to identify and correct errors, or at least a portion of errors, prior to instructor review. In addition, peer feedback fosters student learning by fostering peer support networks, providing feedback in a language that students can easily understand, increasing students' awareness of their own learning processes, and focusing students' attention on key dimensions of the assignment.

To be effective, peer review activities must be clear and specific. The more focused and detailed the guidelines for peer review are, the more likely it is that students will be able to provide useful feedback and guidance in relation to one another's work. For example, you could require students to utilize a very detailed rubric to provide peer feedback on students' writing style. The rubric may specify writing style guidelines for formatting the title page, structuring the abstract, creating an introduction, citing resources in the paper, and/or creating a reference page. In this example, students can review one another's work to highlight writing style errors and offer suggestions to improve the written communication within the assignment. Not only does this type of review provide students with the opportunity to correct common errors prior to submission for grading (thus reducing the instructional time spent highlighting writing errors), it also allows students to more carefully focus on the guidelines and expectations in relation to their own assignment.

The goal of peer-to-peer review is to identify, address, and correct as many errors as possible prior to submission to the instructor for grading and feedback. As such, you should anticipate common errors on targeted assignments and create associated peer review activities that focus exclusively on these issues. Further, you may consider combining peer review activities with feedforward resources in which you identify common errors or concerns, create feedforward resources to help students in the preparation of their assignment, then integrate a peer review rubric to check for mastery.

Summative Analysis

Typically, assignment feedback is limited to the one-to-one comments exchanged privately between the instructor and student. But, to maximize the impact of feedback and reduce instructional time

investment, consider shifting common components of feedback to a summative analysis provided to the whole class. After an assignment, reflect on shared strengths, weaknesses, and challenges to create generalized, class-level feedback. This feedback may take the form of a text-based announcement or may be an informal video of your thoughts and reflections. The value of summative analysis is that it provides students with an informal social comparison that allows individual students to reflect on personal strengths and weaknesses; further, summative analysis feedback ensures all students have equal access to essential instructional resources.

For example, imagine that you are grading papers and notice that students consistently misunderstand a key concept. If you are relying solely on one-to-one feedback, you will need to provide sufficient detail to identify and correct the error in the feedback to each individual student. However, if you integrate summative analysis feedback as a supplement to the one-to-one feedback, you can simply identify the error on each students' assignment, then create a one-to-many resource that goes into detail to correct the error. In a summative analysis, you should highlight the confusion or error, ask students to reflect on their own submission to see if they understood correctly, then provide instructional support and resources to correct the error.

As is the case with all instructional supplements, you should then save your summative analysis in a format that you can update and use with future classes. In addition, you should reflect on the students' errors identified in the summative analysis to adjust your instruction (additions to instructional material or feedforward resources) so that you don't invest additional time in the future repeatedly addressing the same issues.

TIME INVESTMENT TO DEVELOP INSTRUCTIONAL RESOURCES

To maximize the value and impact of your time investment, it is important to consider the potential return-on-investment for the time you put into the development of instructional resources (Sheridan, 2006). The time you dedicate to the development of instructional resources should be balanced with the potential time savings you will gain back over time. Consider examples in Table 2:

Table 2. Balancing Time in Resource Development

Context	Time Investment Considerations
<p>You are scheduled to teach an upper-level undergraduate course for the first time; you are not scheduled to teach the course again. The course has ten students enrolled; there are three substantial writing assignments.</p>	<p>Key factors to consider: 1) there are substantial writing assignments that take considerable time to provide feedback; 2) there are few students; 3) you are not scheduled to teach the course again. With these factors in mind, you will likely not want to invest considerable time creating additional instructional supplements unique to the assignments as you will not likely see a sufficient return on the time investment. Rather, you should invest time creating instructional supplements targeting general writing and citation style as these will apply across all assignments; these supplements would have the added potential of getting use in other courses you teach in the discipline. Further, since there are only ten students, you could invest the time that would have been spent creating topic- or assignment-specific resources to provide more detailed one-to-one feedback on each assignment artifact.</p>
<p>You are scheduled to teach an introductory, undergraduate course for the first time; you are not scheduled to teach the course again. The course has 100 students enrolled; there is one substantial writing assignment.</p>	<p>Key factors to consider: 1) there is only one writing assignment; 2) there are many students. Even though you are not scheduled to teach the class again, providing effective feedback to 100 students will take considerable time. As such, you are likely to see a return on the investment of up-front time you spend to create instructional supplements or activities that will reduce the need for detailed one-to-one, postassignment feedback. In this case, you should create feedforward information in relation to the topic, writing, and style, to reduce potential errors that will require corrective postassignment feedback. Further, because introductory students may not yet possess the skills to effectively self-review activities to ensure they have met requirements, you would likely benefit from peer-to-peer activities that allow students an outside view of their work (and an opportunity to revise) prior to submission for instructor feedback.</p>
<p>You are teaching a graduate course that is a regular course in your teaching schedule. You generally have 10 to 15 students per course. There are two substantial writing assignments.</p>	<p>Key factors to consider: 1) you regularly teach this course; 2) there are two assignments; 3) it is a graduate level course. In this case, because you teach the course repeatedly, it is going to be worth your initial investment of time to create instructional supplements that reduce the amount and detail of postassignment feedback required. While you may not gain the time back in any single course (due to the low number of students), you will see a return on your investment over time. Since it is a graduate level course, you can assume that students will be more experienced with self-review strategies, so you can dedicate more of your time to creating feedforward information and self-checks, but you may not need as much time for peer review activities.</p>

As seen in these examples, there are several factors to consider when determining how much of your time to invest in the creation of instructional supplements. Key questions to ask yourself include:

1. Will creating a supplement reduce the amount or detail of postassignment feedback required?
2. Do I know students' common errors or challenges in relation to this specific assignment so that my investment of time to create resources will be relevant and valuable?

3. If I invest time to create instructional supplements will I be able to utilize the materials in the future (e.g., future offerings of same course, different courses in the discipline, or other assignments)?

4. Are there enough students in the course to justify that an investment of time to create instructional supplements will be offset by time saved when providing feedback on individual assignments?

5. Do students have the academic experience and cognitive skills to effectively utilize the instructional supplements or activities to self-correct mistakes prior to submitting the assignment to the instructor?

INTEGRATION OF FEEDBACK BANKS

When grading any given assignment, one thing becomes clear: students tend to make relatively consistent errors. Whether it is in relation to writing style, conceptual understanding, or adherence to assignment guidelines, instructors tend to find themselves repeating feedback comments from one student to another. This is not to imply that feedback is not individualized (as any given student may not make the exact errors as another student), but rather that if we look at the feedback provided to any single student, it is likely that most feedback comments will also be relevant to other members of the class. Thus, rather than repeatedly investing time creating the same feedback comments over and over again, you can increase the efficiency of providing one-to-one feedback by creating feedback banks that allow you to save and reuse common comments or phrases.

The value of feedback banks lies in their ongoing time savings when grading multiple student assignments. For example, imagine you are teaching an introductory class with 40 students that requires two writing assignments formatted in APA Style. As you grade the first paper, you notice that the student has not included the digital object identifier (DOI) for sources in the reference list. To help correct this error, you provide the following comment:

A new guideline of the 6th edition of APA style is the inclusion of DOI (digital object identifier) information with each entry in your reference list for which DOI information is available. The DOI provides readers with necessary information to track down the permanent link for each reference. For assistance in locating the DOI, see CrossRef's DOI search site at: <http://www.crossref.org/guestquery/>. If you would like more information on DOIs see: <http://www.apastyle.org/learn/faqs/what-is-doi.aspx>. For an example of how to include the DOI with your reference, see: <http://owl.english.purdue.edu/owl/resource/560/10/>.

Creating a feedback comment like this one, which contains instructive guidelines, corrective information, and examples, only takes a few minutes; for the sake of this example, let's assume it takes three minutes. Three minutes isn't very long and is not likely to impact your teaching schedule. But, let's also assume that half of the class makes the same error in failing to include the DOI information in their references. If you invest three minutes to create this one piece of feedback for 20 students, that will require a full hour. This means you will have invested an entire hour repeatedly recreating the same feedback comment. Now, extending this example to include additional feedback (e.g., ten detailed feedback comments per paper), you are looking at spending hours of your instructional time recreating feedback comments. Further, examining the long-term time investment, if you fail to provide corrective feedback as you grade submissions for the first writing assignment, you will likely see continued errors when students submit the second writing assignment thus extending the number of times you need to provide this type of comment in the future.

In contrast, let's examine the same example using an automated feedback bank. It will still take three minutes to create the original feedback comment. But, rather than having to recreate the feedback each time another student demonstrates this error, you invest an additional minute when you create the original comment to save and organize it in a feedback bank. Using an automated feedback bank, you can assign a code to that phrase that allows you to quickly insert the comment into any student paper in a matter of seconds. By repurposing and automating your feedback via a feedback bank, you can save hours of grading time without sacrificing the quality or quantity of your one-to-one student feedback comments.

Key to the efficiency of a feedback bank is integrating technology to automate the process. While you could theoretically manage your feedback bank by saving comments in Microsoft Word (or a similar text-based program) and then copying and pasting them into student papers when relevant, the reality is that this is not likely to result in any on-going time savings. Using a manual cut/paste feedback bank system simply shifts your time from creating the feedback to finding, copying, and inserting it. Automating your feedback bank

maximizes time saving by allowing you to create codes or hot keys for each feedback comment and then simply type the code or hot key to insert the comment (Mandernach, Zafonte, & Taylor, 2015).

There are several approaches you can use to create and/or implement an automated feedback bank:

- Microsoft Word AutoCorrect
- Microsoft Word Quick Parts
- Commercial Feedback Banks
- Text-Expander Programs

Microsoft Word AutoCorrect. The autocorrect feature of Word functions by having a preprogrammed database of if-then algorithms that replace common errors (e.g., misspellings, punctuation, capitalizations, etc.) with the correct information. Taking advantage of this built-in functionality, you can add entries into the existing autocorrect database in which you create a code that will be replaced with a saved feedback comment whenever that code is typed. For example, rather than repeatedly typing a feedback comment (such as, “Do not use all capital letters for the title of your paper. Per APA Style, you should only capitalize the important words in the title of your paper. See Purdue OWL guidelines for the title page at: <https://owl.english.purdue.edu/owl/resource/560/01/>”), you can save this comment with the code “titlecaps.” Once you create this feedback comment code, any time you type that code, Microsoft will automatically replace the code with the saved feedback comment. See <https://cirt.gcu.edu/documents/teachingtips/wordcommentbank2flv> for a demonstration on creating a feedback bank using the autocorrect feature of Microsoft Word.

While using autocorrect is a no-cost, efficient means of creating a feedback bank, there are some important considerations that may limit its utility:

- Autocorrect has a 255-character length limit, so it may not be suitable for saving longer or more detailed comments.
- Once you create an autocorrect association, it will automatically replace that code any time the code is typed. As such, you must make sure that the code is not a real word or something that you would type as is.
- The use of the saved feedback is limited to Microsoft products. As such, your saved feedback cannot be utilized in other programs (such as your learning

management system).

- Autocorrect does not provide a means of organizing comments or listing codes. With this in mind, you will need to create an additional file to keep track of your saved comments (a separate spreadsheet works well for listing codes and their associated feedback comments).

Microsoft Word Quick Parts. Like autocorrect, Quick Parts is a built-in feature of Microsoft Word that allows you to write, save, and reuse textual content. The key difference between autocorrect and Quick Parts lies in how they are implemented. Quick Parts is managed via the AutoText Gallery and allows for unlimited comment length. To insert saved feedback, rather than utilizing hot keys, you use the “insert” feature and search for the desired comment. Because saved comments must be manually identified and selected, Quick Parts may be more useful for managing feedback banks that have fewer, but longer, more detailed, comments. For instructions on using Quick Parts to create reusable feedback, see: <http://www.thetraininglady.com/quick-parts/>

Commercial Feedback Banks. Commercial feedback banks allow you to purchase files of standardized feedback comments relevant to targeted learning topics (e.g., general writing issues, disciplinary writing styles, etc.). Commercial feedback banks (such as GradeAssist, <http://www.educo360.com/>) frequently function as a toolbar add-on and integrate seamlessly with word processing programs or learning management systems. While commercial feedback banks save considerable time in the creation of comments, the scope and range of comments is limited to those issues that are shared across courses and disciplines. Commercial feedback banks may be a good option to maximize grading time in writing-intensive courses that require close attention to writing style and quality.

Text-Expander Programs. Like Microsoft Word AutoCorrect, text-expander programs allow you to create and manage your own feedback banks, then quickly and easily insert saved text via hot key shortcuts. While the basic functioning of text-expander programs is the same as Word autocorrect, text-expander programs offer some distinct advantages:

- Text-expanders work across programs;

you can utilize the hot key shortcuts to insert feedback in word documents or directly in the learning management system.

- There is generally no limit to the length of saved comments.
- Comments can be organized and grouped according to theme, topic, or assignment.
- Some text-expander programs (such as eMarking Assistant; <http://emarkingassistant.com/products/emarking-assistant/>) allow for the integration of multimedia—audio and/or video—as a component of the saved feedback.
- Text-expanders frequently utilize cloud-based hosting, which allows you to access and utilize your feedback banks from different computers.
- There are many text-expanders on the market; popular options include:
- Phrase Express; <http://www.phraseexpress.com/>
- ActiveWords; <http://activewords.com/>
- Text Expander; <https://smilessoftware.com/TextExpander/>
- Texter; <http://lifehacker.com/238306/lifehacker-code-texter-windows>
- Typinator; <http://www.ergonis.com/products/typinator/>
- TypeIt4Me; <http://www.ettoresoftware.com/mac-apps/typeit4me/>
- eMarking Assistant; <http://emarkingassistant.com/products/emarking-assistant/>

Regardless of which approach you utilize to automate your feedback bank, it is essential that you develop high quality feedback comments and create an effective organizational structure. Allow for additional time in the initial development of your feedback comments to ensure that each comment is worth saving and reusing. To be effective, feedback comments should be specific, clear, user-friendly, action-oriented, and provide resources or additional information for students who need more guidance. The goal of each feedback comment is to provide sufficient instructional information so that students can self-correct and learn from their error. Not only will this type of feedback enhance student learning, but it will reduce the one-to-one

time spent in the ongoing correction of errors and misunderstandings.

Once you have created high quality feedback comments, you must save and organize with a system that allows for ongoing ease of use. Feedback banks can be organized several different ways:

- *Assignment-specific.* Assignment-specific feedback focuses on the topics/concepts, assignment expectations, and guidelines unique to a single assignment. Assignment-specific feedback is often created in relation to the expectations of a given assignment and will be specific to only that assignment.
- *Content-specific.* Content-specific feedback addresses common conceptual errors in relation to theories, terms, or concepts. Content-specific feedback targets a topical or conceptual level, so it is not necessarily unique to any given assignment but may be relevant across a range of activities within a single course.
- *Discipline-specific.* Discipline-specific feedback is more general and includes rules, guidelines, or resources that are consistent across all courses within the discipline. This type of feedback may include broad theoretical perspectives or disciplinary writing standards (such as APA Style or Chicago Style).
- *General-writing.* General-writing feedback includes interdisciplinary standards with broad relevance. This type of feedback focuses on writing style, communication standards, grammar, and spelling.

When creating codes for your feedback comments, utilize a naming structure that is intuitive and specific. If feedback comments are assignment-specific, it is useful to name them with a common base code including the course number and assignment; this common base code can then be extended for each feedback topic. For example, the base code of 201M3xx specifies that it is a course number 201, module 3, assignment; the xx changes depending on the focus of the comment. As such, 201M3nr could be the code for a comment that corrects misunderstandings related to negative reinforcement; 201M3variable could be the code for errors in understanding variable schedules of reinforcement. Using a naming system such as

this for your feedback comments, you can keep comments organized in relation to the specific assignment to which they apply. Likewise, if a feedback bank is discipline-specific or general, you want to create a naming structure in which it is easy to find and reuse comments across courses. For example, a feedback bank of MLA writing style comments may all start with the common base code of MLAx. The xx can then be changed to reflect the focus of each comment.

The key to an efficient automated feedback bank is coding and organizing feedback comments in a manner that you can find and utilize quickly. It is helpful, regardless of what system you use to automate your feedback bank, to create a key of feedback bank codes. When grading, you can refer to the key to quickly find relevant codes for each feedback comment (you can either print the key and keep it next to your computer or you can view the key on a secondary computer monitor).

Feedback banks can increase the efficiency by which you provide feedback in a variety of contexts. Not only can you integrate feedback banks to provide detailed, embedded comments in relation to individual student assignments, but you also create feedback banks to manage summative feedback provided at the completion of student work. For example, you may create a feedback bank in relation to a specific rubric in which you create stock feedback comments for every performance dimension:

	Excellent	Good	Satisfactory	Poor
Content-Overall	coe	cog	cos	cop
Content-Dimension	cde	cdg	cds	cdp
Assignment-Dimension #1	ad1e	ad1g	ad1s	ad1p
Assignment-Dimension #2	ad2e	ad2g	ad2s	ad2p
Writing	wre	wrg	wrs	wrp
Discipline Style	dse	dsg	dss	dsp

Or, you may create a feedback template in which every student receives the same basic feedback paragraph, but then you utilize a feedback bank to customize the key focus areas for each student. As seen in the following example, you could utilize a feedback bank to store the options of strengths, weaknesses, suggestions, and examples. While

the template is the same for each student, you can quickly replace the XX areas with feedback bank information to customize it to each student; for example:

- In this comparison, you effectively XXs. Key to this type of analysis, it is important that you XXw. As you likely noticed, not all studies clearly list each of the key factors for effectively analyzing the research (question, population, limitations, operational definitions, etc) . . . but as you become more familiar with reading empirical research, you will be able to draw conclusions not only about what is written, but also about what is NOT written. In many cases, the information that is left out of the research report can be just as telling as the information that the authors chose to include. To enhance your comparison paper, I would encourage you to XXi and XXo. In addition, you may want to take a look at the following examples to help guide your APA style writing: XXe.

STUDENT EXPERIENCE

While creating individualized, meaningful feedback is clearly an effective strategy for fostering student learning, feedback is only effective if students use it. Simply put, there is no value in feedback—regardless of how good it is—if a student fails to read it. While students’ failure to read feedback is not unique to the online classroom (Ackerman & Gross, 2010; Redd & Kennette, 2017; Weaver, 2006), the text-heavy nature of the online classroom may exacerbate challenges with engaging students via traditional, text-based feedback.

As such, rather than investing time creating text-based feedback that students may not read, you can simultaneously maximize your time and student interest via multimedia feedback, which fosters students’ attention as it is a more social, novel way of interacting with material. Not only does it personalize the instructor-student relationship, but it humanizes the instructor and evokes the personalization principle of multimedia learning (Clark & Mayer, 2011). Further, students may be more likely to view multimedia feedback as it caters to a range of learning preferences and prompts more active processing of feedback

information (Mandernach, 2009).

Multimedia feedback can take on a range of formats:

- **Audio**—When providing audio feedback, you can simply record your voice and share your feedback with students via an audio file. You can either record your thoughts, ideas, and suggestions as you are reviewing each student’s work, or you can wait and summarize your key feedback after reading the student’s submission. Because you can talk much faster than you can type, recording audio feedback allows you to provide rich, detailed feedback with less of a time investment.
- **Video**—Similar to audio feedback, video feedback can either be a narration of your grading or a summary of the student’s work. While audio feedback includes only your voice, video feedback provides a more personalized experience, communicates nonverbal information, and allows you to include demonstrations or props. See Video Feedback Sample (https://youtu.be/YBXF-A_pstk) for an example of video feedback on student writing.
- **Screen Cast**—Screencast feedback allows you to record your computer screen along with audio or video narration. Screencasts are particularly valuable when you want to provide detailed feedback on student submissions highlighting strengths, weaknesses, or suggestions at specific points in the submission. See Sample Digital Portfolio Screencast–Teacher Feedback (<https://youtu.be/BoBHeYcbHpA>) for an example of screencast feedback on a student essay.

Table 3 provides an overview of popular Web 2.0 applications that can be used to create multimedia feedback (Mandernach & Taylor, 2011)

Table 3. Web 2.0 Tools for Multimedia Feedback

Audio	VoiceThread http://voicethread.com/	VoiceThread is a collaborative, multimedia slide show that holds images, documents, and videos and allows people to navigate slides and leave comments using voice (with a mic or telephone), text, audio file, or video (via a webcam).
	Audacity http://audacity.sourceforge.net/	Audacity is a free, easy-to-use and multilingual audio editor and recorder.
	Voice Recorder https://online-voice-recorder.com/	Voice Recorder is a free, online voice recorder that works directly from your browser to create mp3 files.
Video	YouTube http://www.youtube.com/	YouTube allows users to discover, watch, and share originally-created videos.
	Loom https://www.useloom.com/	Loom is a video and screen capture extension for Chrome browsers that allows for quick and easy creation of videos or screen captures with no uploads or downloads required.
Screen Cast	Screencast-o-Matic http://www.screencast-o-matic.com/	Screencast-0-Matic is the original online screen recorder for one-click recording from your browser.
	Jing http://www.techsmith.com/jing.html	Jing allows you to capture an image of what is on your screen or record up to 5 minutes of onscreen video.
	SnagIt https://www.techsmith.com/screen-capture.html	SnagIt allows you to capture your screen, edit images, add video and create dynamic screencasts.

The importance of good, high-quality feedback remains the same regardless of the format in which the feedback is provided. But integration of multimedia feedback allows you to increase the impact of feedback on the student learning experience to ensure adequate return on instructional time investment. If you are going to invest time to create feedback, it is essential that you provide that feedback in a format that students are willing to use and learn from.

BRINGING IT TOGETHER

The suggestions offered in this article are effective in isolation, but to really maximize both your time and the impact of your feedback, you should combine approaches to create a holistic feedback strategy. Table 4 provides a summary of effective strategies. Design your course to provide opportunities for automated feedback but go one step further to analyze the errors indicated by the automated feedback and use this insight on the most common errors to integrate targeted instructional resources. Likewise, as you build your feedback banks, take note of where the bulk of your corrective feedback lies so you can add course features and supplements to address these issues for future students. As you create multimedia feedback, take note of what students use, what works and what does not, and reflectively analyze this information to guide your future time

investment. Just as there is little value in repeatedly spending your time doing the same thing, there is no value in investing time creating feedback or resources that students do not utilize. Recognizing that 40% of your time is likely to be spent on grading and feedback activities, monitor the impact of your time to prioritize feedback activities that produce the greatest gains in student learning, satisfaction, and engagement.

Table 4. Dos and Don'ts for Providing Effective and Efficient Feedback in the Online Classroom

	Don't	Do
Nature of Feedback	Provide critical feedback that doesn't provide user-friendly information to correct errors.	Provide feedback that is action-oriented and tells student what they should do with the feedback information.
	Focus exclusively on the cognitive component of learning without considering the impact of feedback on students' motivation in the online classroom.	Provide feedback that targets the affective, behavioral, and cognitive aspects of learning.
	Delay feedback to the point that students do not have an opportunity to integrate the feedback in a formative manner.	Provide feedback in a timely, consistent manner.
Feedback Banks	Waste the investment of your time by failing to save feedback that has the potential to impact many.	Save feedback that is used across a number of students.
	Spend considerable time saving and organizing feedback that will only be used for a small number of students.	Invest time in creating high-quality repetitive feedback.
	Fail to create a system that makes it easy to find and use feedback bank comments in the future.	Organize feedback in a manner that allows for efficient use across students and terms.
	Manually manage feedback banks; cut/paste strategies are an inefficient means of utilizing feedback banks.	Integrate technologies to help implement feedback bank comments in an efficient manner.
	Fail to consider the use of feedback banks for both individual comments and generalized assignment feedback.	Utilize templates and rubrics to provide a structure for individualized feedback.
Holistic Approach to Feedback	Repeatedly integrate the same feedback in response to students' work without also integrating strategies to prevent the errors from occurring in the first place.	Integrate feedforward strategies to reduce the need for summative feedback.
	Rely exclusively on either individual or group feedback.	Utilize a combination of one-to-one and one-to-many feedback approaches.
	Assume that students will not benefit from the process of evaluating the work of their peers.	Integrate opportunities for peer-to-peer feedback.
	Rely exclusively on text-based feedback.	Explore the use of video, audio, or screencast feedback.

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