Feedback That Inspires Learning

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Feedback is a powerful practice with incredible potential to increase achievement – both the feedback teachers offer and that students contribute. As a tool to engage learners, teachers use feedback to shift and share responsibility for achievement. Through current research and practical examples, this session will describe the effective and efficient feedback that has most potential to improve learning for students.

Participants will:
- Identify types of effective feedback practices
- Apply tools and templates to support the efficient use of feedback
- Describe ways that feedback increases student investment in learning

Feedback Experience That Helped You Learn or Inspired You:

Feedback Experience That Shut You Down:

Feedback is any comment, verbal or written, that provides descriptive information on the proficiency or quality of a product or performance. Effective feedback provides direction regarding quality and involves action that leads to improvement.

"The main purpose of feedback is to reduce discrepancies between current understandings and performance and a goal …. Effective feedback must answer three major questions asked by teachers and/or by students:

- **Where am I going?** (What are the goals?)
- **How am I going?** (What progress is being made toward the goal?
- **Where to next?** (What activities need to be undertaken to make better progress?)"

—Hattie & Timperley, "The Power of Feedback,"
Review of Educational Research (2007), p. 87

Quality feedback helps students focus on learning. "A study of 1,571 students in 84 mathematics classrooms from fifth to twelvth grades found that students provided with positive constructive feedback by their teachers were more likely to focus on learning rather than performance."
—Deevers, *Linking Classroom Assessment Practices With Student Motivation in Mathematics* (2006), cited in Wiliam, *Embedded Formative Assessment* (2011), p. 151

Characteristics of Effective Feedback
- Describe learning; it doesn't quantify or evaluate it.
- Describe strengths in terms of the learning criteria.
- Provide next steps for specific action.
- It is focused and manageable.
- It is timely.

Ideas that Are Affirming	Ideas to Try or Consider/Beliefs to Discuss	Questions/Challenging Ideas to Revisit

Types of Feedback

John Hattie and Helen Timperley (2007) described four types of feedback and their potential impact on deeper learning from a robust review of feedback research.

Personal Feedback:
- It is most external and furthest from connecting learning to student performance.
- It may be interpreted by students as judgment on their self-worth because the learner makes his or her own assumptions about why the teacher said "good" or "try harder." From these assumptions, the student will decide if he or she thinks any further action will equal more success (achievement, positive praise). If not, this is where praise with lack of a description leads to further disengagement.
- Praise used to motivate may have counterproductive effects because individual students have their own internal beliefs and attitudes about what they want. For example, praising a student publicly for doing good work may motivate a student who wants to be seen as a "good" student but cause a student who doesn't want to be seen as a "good" student to act out in order to fulfill that expectation or at least the reputation that student desires.
- This is not to be confused with praise that offers description such as: "Fantastic presentation! The visuals captured my attention and effectively made your point."
- It is often the easiest to provide.
- It has little, no, or a negative effect on student learning.
- Examples:
    - "☺"
    - "You gave a fantastic presentation."
    - "Good job!"

Task or Product Feedback:
- This usually addresses the correctness or incorrectness of a response.
- It is more effective when addressing misconceptions versus the absence of or lack of information.
- It's most powerful when used to improve a process or to promote self-assessment and goal setting (moving toward process feedback and self-regulation feedback).
- It can be offered to individuals or groups in written or verbal form.
- It is most effective when offered with simplicity and specificity.
- It has a moderate effect on student learning.
- Examples:
    - "Add examples and explanations to support your description of the character as smart."
    - "Add more information about what led to Emmitt Till's tragedy."

Process Feedback:
- Comments address the process students used to understand or produce their work (writing process, problem-solving strategies, reading strategies). Essentially, it's the process that is used to complete the task and make meaning.
- The goal with this type of feedback is to guide the learner to automaticity, where they begin to internalize the process in order to move to self-regulation or self-assessment.
- Comments focus on asking students to revisit a specific aspect of the process to revise their work.
- It includes comments or activities that ask students to analyze their errors and make corrections.
- Process feedback connected to student goal setting is effective.
- Comments may direct students to strategies to help them come to what they know and don't know or to make adjustments in their work.
- It has the potential to significantly affect student learning.
- Examples:
  - "Review the definition of an inference and different ways we find them. Choose one and use it to find the inference in the first section of the reading."
  - "Review the tips for creating effective PowerPoint slides. Revise your slides to reflect those tips."

Self-Assessment or Self-Regulation (Feedback to Self):
- It is focused on the student using what they already know to make adjustments.
- Involves self-assessment where learners **assess their work** in comparison with the bigger goal (rubric) or strong work (writing samples, effective solutions) and **make plans** to revise or fix their work.
- It may involve learners recognizing they need help, but asking for hints instead of answers.
- It has a significant effect on student learning.
- Examples:
  - "Review the elements of a strong supporting paragraph. Revise your paragraph using those elements."
  - "Review your unit 1 math test and identify your strengths (what you know and feel confident about) and analyze your errors to identify the math concepts you need to work on."
  - "Use the writing rubric to self-assess your work (both strengths and focus areas). Provide examples to support your rating."

Efficient, Effective Feedback: Addressing Time

1. **Determine the purpose** of the feedback. If it is to help students learn more, offer them one or two comments **and** make sure they are required to act on those comments.

2. **Write rubrics** so they are phrased in positive language. When a student gets a rubric score of 2, he or she knows that the language described in that 2 is a strength, and they look to 3 for the next step. When rubrics are written in deficit language, it is much more difficult for students to use it to make revisions and move forward.

3. **See descriptive feedback** as a step toward teaching students what quality work looks like and slowly move to having students provide more feedback on their own work (student self-assessment & investment).

4. **In the moment:** Have a clear set of criteria or list of "look fors" for the targeted learning. As students work, walk around and provide feedback in the moment and expect action in the moment.

5. **As a collaborative team**, review samples of student work and come up with three to five comments that are descriptive and specific. These comments can be copied and pasted or shared on sticky notes after some thoughtful and intentional planning. This reduces the time teachers may spend commenting on areas that are not the target of the assessment.

Name _____	Name _____
Strength:	Strength:
Next Step:	Next Step:
YOUR PLAN TO ACT:	YOUR PLAN TO ACT:

6. **Consider your criteria** and write short statements for each criterion that students might select. In this model, the students would review their work and select the comment that best matches what they need to work on. The teacher may model how this works with various samples of work. (Work can be that which is saved from previous students—always with names removed; anonymous samples found on student work sites; teacher-written samples; video segments from Teachertube or Youtube.)

Criteria	Comments: Star your strength. Circle your next step.	How and when will you take this next step? What help or support do you need to act on your next step?
High School Mathematics		
Mathematical knowledge	Executes mathematical algorithms completely and accurately Uses accurate notation and mathematical terminology Confidently shows understanding of the mathematical concepts required	
Strategic solutions	Identifies all elements of the problem Shows relationships among elements Clearly shows systematic problem-solving strategy	
Mathematical explanation	Uses mathematical terminology to justify solution and strategy or counterstrategy and solution Uses appropriate diagram and describes elements Provides examples or counterexamples to explain solution	
Elementary Writing		
Word use	Uses a variety of words to describe Uses descriptive vocabulary	
Supporting details	Clearly support main idea Explanation of support helps your reader understand your point.	
Sentence structure and conventions	Sentence structure is varied and keeps reader interested. Sentences are complete. Spelling is accurate. Capitalization is accurate.	

6. **Use current structures** to provide feedback and use it as part of instruction

Descriptive Feedback on Homework

This classroom example cited in Nicole Vagle's chapter "Inspiring and Requiring Action," in *The Teacher as Assessment Leader* (2009), pp. 215–216, is an account of descriptive feedback as an ongoing process designed to bring students into partnership in learning from their homework. Vicki Barry, a mathematics teacher at Goodrich Middle School in Nebraska, implemented a descriptive feedback process for homework with her sixth-graders. (Barry's description of the process originates from *Using Feedback in a Sixth Grade Mathematics Classroom* (2008), pp. 18–20.)

> When I began my action research study, the end of the hour for homework time dramatically changed. Since my study involved having students give their peers feedback on their homework assignments, I had to plan my hour accordingly so there would be enough time after instruction to follow through with the feedback process. I felt I needed 25–30 minutes initially, so it took three days for me to adjust my instruction time properly to allot enough time for students to be introduced to the process. When I finally altered my lesson correctly, I passed out the feedback forms to my students after the daily objective lesson and gave them instructions on how the process was going to work.
>
> Once the students exchanged their papers and had their names on the feedback forms [see next page], I would go over the assignment's answers …. The students had to give feedback on three problems which I chose because I felt those problems were the most significant to the objective. If students did not know how to solve the problem, or what to say for feedback, we would discuss the problem as a class on the board.
>
> After the students gave feedback to their peers on the forms and nobody had more questions, I would have the students pass back the papers with the forms to their peers. Then, I would give everyone two to three minutes to look over their comments and to write a quick reflection on how the feedback helped them learn or fix their mistakes. At the end of the hour, the students would then pass their papers in to me so I could review them. Then, the students began working on the next assignment for the following day after we summarized the objective.
>
> By the end of the study, this process changed for the better. After a couple of weeks of modeling and practice, it did not take as much time as it did in the beginning. In the beginning I had to allot 25–30 minutes of class time, whereas in the end, I only allotted 10 minutes. I also stopped telling the class which three problems the students had to give their peer feedback on because the student and I found it much more effective if they were able to choose the three problems that their peer missed.

Barry reported that the homework completion rate increased from 50 percent to 77 percent (22 students) within the first four feedback sessions. In addition, she observed that "the students went from stressing about giving feedback to begging for it when they did not receive any." In terms of achievement, 80 percent or more of students were proficient on all 18 objectives. In this scenario descriptive feedback became a consistent process in which both students and teacher shared the responsibility for learning from the homework. This example illustrates an effective homework practice that demonstrates authentic student involvement.

Descriptive Feedback

Name: _____   Date: _____

Objective: _____

Problem # _____ Feedback

_____

_____

_____

Problem # _____ Feedback

_____

_____

_____

Problem # _____ Feedback

_____

_____

_____

Reflection: What do you think about the feedback you received? Has it helped you? Explain why or why not.

_____

_____

_____

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7. Focus on errors rather than on mistakes. (Fisher & Frey, 2012, excerpt online at http://www.ascd.org/publications/educational-leadership/sept12/vol70/num01/Making-Time-for-Feedback.aspx)

All of us make mistakes. If we're fortunate, we catch them ourselves (or someone else does), and we do our best to correct them. Typically, we make mistakes through lack of attention. But once they're pointed out to us, we immediately recognize them and usually know the corrective action to take.

Our students do this as well. They make mistakes because of fatigue or inattention, and as a result, their performance suffers. However, they often possess the knowledge needed to avoid the mistake in the future simply by becoming more attentive.

It's easy for us to recognize mistakes when we're familiar with the student's previous work. A mistake strikes us as being uncharacteristic, usually because we've seen the student do similar work correctly in the past.

Mistakes can be huge, and we aren't minimizing them. NASA lost a $125 million orbiter in 1999 because one engineering team used metric measures while another used English measures. That was a costly mistake, but the problem wasn't that the second team didn't know how to use the metric system. Had they caught the mistake in time, they would have known precisely how to correct it.

Errors, on the other hand, occur because of a lack of knowledge. Even when alerted, the learner isn't quite sure what to do to fix the problem. He or she lacks the skills or conceptual understanding to do anything differently when given another opportunity to try.

Correcting mistakes while failing to address errors can be a costly waste of instructional time. When teachers focus valuable time on correcting mistakes, they have little time to address errors. Correcting errors typically results in new understanding and improved performance; moreover, once teachers implement this practice, students rarely make those errors again.

Errors fall into four broad categories and, when analyzed, can provide us with the feedback we need to make our instruction more precise.

- *Factual errors* interfere with a student's ability to perform with accuracy. Life sciences teacher Kenya Jackson sees this with her students who have difficulty clarifying the differences and similarities between recessive and dominant traits. Students may not understand what constitutes a dominant trait, or they may incorrectly define certain terms.
- *Procedural errors* make it difficult to apply factual information. "When I teach how to use a Punnett square[1] to predict probability about genotype," noted Ms. Jackson, "students can tell me what dominant and recessive alleles are, but they can't calculate them in a meaningful way." Students may fail to divide the two alleles correctly for each parent or to follow the procedure for matching alleles.
- *Transformation error*s occur when students incorrectly apply information to a new situation. Ms. Jackson noted that the Punnett square procedure is only valid when the traits are independent of one another. "Although I use examples and nonexamples in my teaching [that is, showing students right and wrong ways to do something], some of them still overgeneralize the procedure and try to use it with polygenic traits, such as hair color," she said. "For some, they've learned a tool, and now they want to use it in every situation."
- *Misconception errors* can result from the teaching itself. "I have to stay on guard for this," Ms. Jackson said. "Because I teach them Punnett squares, many students hold this misconception that one gene is always responsible for one trait. These can be stubbornly held, so I have to teach directly with misconceptions in mind."

8. Identify patterns in student errors. (Fisher & Frey, 2012, excerpt online at http://www.ascd.org/publications/educational-leadership/sept12/vol70/num01/Making-Time-for-Feedback.aspx)

Teachers spend hours writing comments on student work in hopes of improving achievement. In most cases, the feedback is of good quality. Of course, there are examples of "feed-bad," in which students receive useless comments from a teacher. For our purposes, let's assume that the feedback teachers provide is appropriate.

When teachers return the work to their students, all their data are gone. They have to try to remember which students made which errors because students typically do one of two things when their work is returned. Some students discard the paper, never bothering to look at the feedback. Others are compliant and make the required changes, but nothing more. Either way, not much learning occurs.

Instead, teachers should look for patterns in student errors. They need to know which students made which kinds of errors. In doing so, they can target instruction or intervention on specific areas of student need rather than reteach an entire concept, lesson, or unit of study. Analyzing student performance in this way enables teachers to be much more precise in addressing errors and to organize data in such a way that they don't have to keep looking through student work to determine who needs additional help.

For example, world history teacher Angie Graham was on the lookout for specific errors in three different domains as her students collaboratively read a primary source document: skimming and scanning, sourcing, and drawing conclusions. She collected data as she listened to her students interact as well as when they submitted their notes and summaries of the article. She used a matrix, with the broad categories of errors she was looking for listed on one side of the paper in rows and her class periods listed across the top in columns. When students made an error, she added their initials in the corresponding square (see fig. 1).

FIGURE 1. Rubric for Checking for Patterns in Student Errors

Topic: Skills needed to read and understand a primary source document					
Error	Period 1	Period 2	Period 3	Period 4	Period 5
Skimming and scanning to preview text	JC				
Sourcing (where information comes from, author information, type of document, citations)	JC, JT, DL, MM, SL, ST, ND	RT, VE, VD, CC		AA, MG, SC, PM, LG	DP, DE
Drawing conclusions	JC, JT, MM	EC, SJ		AA, MG, BA, GL, PT, DO, DE, LR, SK, EM, TS, LG, PM, DP, RT, HA, KJ, DE, RC, DW, DL, KS, IP, SN, MW, JG, KE, JV	DE, MR, DC, AT
Note: Each set of initials represents a student who made an error.					

Writing and Using Descriptive Feedback
Strength and Next Steps

Step 1: Choose two student work samples from the folder. Review the goals of the assignment and the area of focus.

Step 2: Write **a strength** (descriptive strengths in the work) and **next step** (action to improve the work).

Step 3: Share your comments and revise to develop a strength and next step for each piece of work that is agreed on by your team.

	Strength	Next Step

Step 4. Making Connections

At a school, the team would go back and pile and stack all their student work based on the next step the work needed. The next day lessons would be planned to help students act on those next steps.

Feedback From Students to Teachers

Hattie, in his book *Visible Learning* (2009), suggests that some of the most valuable feedback is when students provide teachers with feedback. This might take the form of the actual student work that is generated where teachers take note of the errors students are making and use that as feedback on where understanding is occurring and where there are misconceptions. Using this information, teachers plan instruction to meet students where they are and help them grow.

In addition, teachers might gather students' insights on what is helping and/or getting in the way of their learning. Consider the section from Chapman and Vagle (2011), *Motivating Students: 25 Strategies to Light the Fire of Engagement*:

When Students Speak Survey
Designed by Nicole Vagle

This survey was designed in the context of a research project. Teachers were invited to learn more about their students, reflect on their practice and then make changes to help students learn more. The idea is that when we ask students about their learning and their experiences in the classroom, they will learn more because teachers will be able to understand even more how students learn.

STUDENTS WILL COMPLETE EACH SECTION OF THE SURVEY. STUDENTS MAY SKIP ANY QUESTION. AT THE END OF THE SURVEY STUDENTS MAY CHOOSE TO SUBMIT OR DISCARD THEIR RESPONSES.

> Students will rate their agreement to the following statements using the scale:
>
> Strongly agree   Agree   Disagree   Strongly Disagree

Student Perceptions of Learning
1. I like to learn new things.
2. When I work hard, I get better grades.
3. When I work hard, I learn more.
4. I believe that if I do what the teacher asks I will learn more.
5. My teacher helps me when I don't understand something.
6. I am learning a lot in my class.
7. What I am learning in class will help me be successful in the future.
8. I know what I am supposed to be learning.

9. Mistakes help me learn more.
10. When I make mistakes, I feel bad (less smart; dumb).
11. When I make a mistake, it helps me know what to study.
12. I can describe what my strengths are in each subject.
13. I can describe what I need to work on in each subject.
14. My assessments reflect what I know about the topic. For example, when I take a test it represents what I know.

Student Involvement in Questions & Discussions (This section was designed in collaboration with Tammy Heflebower.)
1. My teacher waits or pauses after he/she asks a question to the class.
2. After the teacher asks the question, I have time to think about my response.
3. The questions my teacher asks have multiple answers that allow for more than one correct responses.
4. The questions my teacher poses generate lively discussions in class.
5. The questions my teacher poses allows for all members of the class to participate.
6. I have to explain my answers throughout discussions in class.
7. I felt more students responded to the questions my teacher asked.
8. I debate topics in our classroom with my classmates.
9. I discuss topics in the classroom with my classmates.

Student Perceptions of Feedback
1. The comments written on my papers help me learn more.
2. I get comments on my papers.
3. I use the comments on my papers to revise my work.
4. I know what the percentages on my papers mean.
5. OPEN-ENDED: If you get 80% on a paper what does it mean?
6. OPEN-ENDED: If you get 55% on a paper, what does that mean?

Student Perceptions of Homework
1. Homework helps me learn.
2. Homework prepares me for the future.
3. Homework makes me practice what I learn in class.
4. Homework is an important part of school.
5. Homework is hard.
6. Homework is easy.
7. I like doing homework.

Student Perceptions of Grades
1. When I learn more, my grades improve.
2. My grades describe my understanding of the subject. For example, a B in math means I have a B understanding of the math we are learning about in class.
3. I am motivated by grades.
4. If something is not graded, I won't do it.
5. I know what to do to improve my grades.

Student Perceptions of Instructional Strategies.

1. My teacher asks me how I learn best.
2. My teacher uses different activities to help me learn.
3. My teacher asks students what can make the classroom work better.
4. My teacher asks students what is working in the classroom.
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5. I work in small groups in my classroom.
6. Small groups help me learn.
7. I take notes
8. I learn best when I work by myself.
9. I like taking notes.
10. Taking notes helps me learn.
11. Working in groups helps me learn.
12. Drawing pictures helps me learn.

Student Perceptions of Themselves as Student
1. How well do you do in school?

   Really well   Well   OK   Not so well   Not well at all

2. How would you describe your grades.
   Really good grades.   Mostly good grades.   Some poor grades.   Really bad grades.

3. I feel smart in school.
   Strongly agree   agree   disagree   strongly disagree

4. I like school.

   Strongly agree   agree   disagree   strongly disagree

Open ended
1. What helps you learn?

2. What gets in the way of your learning?

3. What does it take to do well in school?

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