



## Flipped Assessment: Revolutionize the Metacognition in Student Learning

As a student, I celebrated passing hundreds of tests in my life. Yet, if I had to take the same test three months later, I would achieve a similar or even lower test result, rarely ever improving. I now recognize why I never improved: I was never introduced to an environment that encouraged a thorough test review and personal reflection.

As an instructor, I spent years recognizing high-achieving students for their test successes with a congratulatory note on their test. However, for the remaining students, I now realize that I inadvertently created a demotivating environment for them. Some students shared and compared their test results with their peers. Those who did not receive a congratulatory note from me may have naturally felt inadequate or even rebuffed by me, their instructor.

The Flipped Assessment (FA) process provides an opportunity for instructors to overcome these and similar obstacles. Through the FA process, students are provided class time to thoroughly review their tests with their peers, allowing them to learn from their mistakes, gain a deeper understanding of the material, and reflect upon their personal efforts. Consequently, I am able to praise and motivate all students who have successfully completed the FA process, regardless of their test performance. Students now feel motivated and encouraged to succeed academically.

In my courses, I implement a two-part FA process:

### Part A: The Review

1. Students complete their test.
2. I photocopy students' test answers and retain the originals to prevent any changing of answers.
3. During our next class, I give each student the test and the photocopy of their answers, then I separate the class into groups (four or five students per group).
4. Within their groups, students discuss and debate the first test question and solution. After 10 minutes, I distribute the solution to the first question, thereby resolving any lingering issues. The process is repeated for the remaining test questions.
5. During this process, students follow the marking key I provide and grade their answers accordingly.

### Part B: The Test Reflection Report

Once the class reviews all of the test questions, students complete a test reflection report critiquing their performance. To guide the content of their test reflection report, students first answer the following three questions:

1. Are you happy with your performance?
2. What did you learn from your peers?
3. Where can you improve?

Next, students write a well-thought-out paragraph that describes the solution to each test question, thereby developing a deeper understanding of the material.

## Perspectives on the FA Process

### Student Perspectives

I conducted a brief survey of my students to gauge their reactions to the FA process. More than 90 percent of the students surveyed indicated they were appreciative of the FA process. The first survey question I asked was, "Do you believe completing the FA process after every test will improve your performance on the final exam if similar questions are included?" Student responses included:

- "Absolutely, I feel I learn more from my mistakes than listening to someone lecture, and I think this was a very valuable process."
- "Definitely, I think that the FA process forced me to actually go over and find my mistakes, which I likely would not have done otherwise."

The second survey question I asked was, "Do you believe using the FA process during class was an effective use of class time?" Student responses included:

- "Yes, I believe it is an effective use of class time because it allows students to reflect with fellow peers and discuss why they answered the question that way. Students gain a better understanding about the question they got wrong and how to improve from a student's perspective."
- "I think it was [an] effective use of class time because, even though we weren't necessarily being taught new material, we were teaching ourselves what mistakes we made and learning the subject over again. It was also useful doing it in class because we had the opportunity to learn from our peers if we didn't understand something. That helped everyone learn by teaching and learning from each other."

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### *A Peer's Perspective*

- “I will continue to use the FA process. By having the opportunity to review their test answers and test solutions and write a test reflection report, students pause to consider their successes and struggles. Students learn where to improve when they are given the time to carefully review their test answers with the test solutions and, by doing so in the classroom with their peers, they can seek clarification from their peers. In our last test review and reflection, I asked students who achieved less than 75 percent to include a study plan in their test reflection report that detailed the steps they would take to improve their grade. I then reviewed their plans and made further suggestions. I see first-hand that students are learning from their mistakes during the FA process, they are learning from others, and they are learning to change their study habits.”

### **Group Formation**

During the FA process, student groups were formed using two methods. At the beginning of the term, students formed their own groups (method one). Later in the term, student groups were randomly created using a deck of cards (method two). For example, students who selected a number nine card worked together as a group.

Initially, I presumed students would significantly favor method one as their preferred method for student group formation. However, I discovered that 25 percent of the students favored method one, 25 percent of the students favored method two, and 50 percent of the students were indifferent to either approach.

The third survey question I asked was, “During the term, student groups were arranged using two formats. In method one, students selected their group members. In method two, student groups were randomly selected. Is there a method you prefer?” Student responses included:

- “I think either method works as long as you have a group of friends that work hard. Sometimes when working with friends you have a tendency to get easily distracted; when you work with people you don’t know there is less of a distraction.”
- “I don’t prefer any method over the other. I believe there are benefits to both methods. For method one, I believe that work can be done more effectively because there is less awkwardness in the environment. For method two, I believe this puts you in situations where you have to work with people you don’t necessarily know. This provides beginner experience to working in a real work environment. However, these are both good things and there is no limiting factor.”

Based on these results, I recommend a blend of both approaches over the course of the term.

### **Recommendations**

### *The Challenge: Time*

Significant challenges with the FA process are the class time required for the peer discussion and marking and generation of the test reflection report. For instance, to properly conduct the FA process, instructors need two hours of class time after each test. If instructors have four tests during the term, that is eight hours. It can be tempting to view the implementation of the FA process as a time requirement impossibility!

However, you can overcome this limitation. For each new topic in my courses, students must complete specific readings, submit summary essays, and complete one or two basic- to intermediate-level problems, all of which are considered pre-class efforts. Students must submit their pre-class efforts at the beginning of each new topic. Students have the cognitive ability to learn the basic material on their own. As a class, we move into the intermediate- and advanced-level material for each topic within minutes and those who haven’t done the pre-class work learn very quickly that we will not make up for that work during class. By relying on students to learn the basic material on their own, additional hours are available to implement the FA process.

### *The Secret*

In my courses, students are evaluated based on their pre-class efforts (5 percent of total grade) and test reflection reports (5 percent of total grade). Over the years, student attendance has been close to 95 percent; students lose marks if they are not present to submit their pre-class work or test reflection reports. Student participation is very high when marks are awarded. I encourage students to submit high-quality work by allowing resubmissions for their first couple of attempts. I evaluate the student submissions based on a 100 percent or zero basis; there are no partial scores. By the end of the term, I often find that 100 percent of the students are submitting high-quality pre-class work and test reflection reports.

### **Recognizing Your New Role**

As a FA instructor, your role changes. You now become an auditor of each student’s marking efforts and a reviewer of their personal test reflection reports, rather than an adjudicator of their test answers. Additional benefits for the instructor include:

- Significant reduction in overall grading time and effort. After a couple of tests, I found that 75 percent of my students are accurate with their self-grading efforts. Their self-assigned grade is within two marks or less of the grade I would have assigned.
  - Some students discover one or more of their peers are performing exceptionally well in class. The personal reflection helps some students realize that perhaps it is not the instructor who is to blame for any lack of success. Consequently, there can be a transformative shift in students’ attitudes and efforts.
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Implementing the FA process may seem intimidating at first, given the extra class time required; however, the benefits to students of taking ownership of their learning far outweighs the additional planning. Enjoy the journey!

*What are your thoughts on the Flipped Assessment Process? Tell us in the comment section or on [Facebook!](#)*

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