WHAT IS THE IF-AT?

You may have recognized some limitations with the traditional multiple-choice testing system. While the traditional system broadly assesses students’ level of understanding, it does not correct student’s misunderstandings and actually reinforces them by not providing timely feedback. Typical multiple-choice testing procedures do not permit students to know if their answers are correct, not at the time of testing and often not at all. Students may receive feedback 24 or 48 hours later, but, even then, professors often return answer forms without the questions. This critical aspect of the learning process – the role of feedback and its timing – has frequently been ignored by educators.

As an instructor, you would like students to carefully consider the questions and answer choices and to “reason through the problems” – gaining knowledge even while being assessed. You would also like students to be challenged rather than intimidated by the evaluation process, knowing they are valued as learners, not simply as test scores. These goals can be accomplished by implementing the IF-AT system.

To address these issues, a new multiple-choice assessment system, the “IF-AT”, or the Immediate Feedback Assessment Technique, has been developed. This revolutionary learning system allows instructors to give partial credit for proximate knowledge. More importantly the IF-AT provides immediate affirmation and/or corrective feedback on a question by question basis, while a student is taking a test or quiz, ensuring that a student’s last response is the correct one. The IF-AT teaches while it assesses, facilitating learning and improving retention.

WHY USE THE IF-AT?

1. **IF-AT is a learning system and an educationally sound practice** – testing without providing immediate feedback is not. Studies have repeatedly shown that students “commit” to the answer they give on a test. Without immediate corrective feedback, students often learn the wrong information based on what they answer on a test! The IF-AT addresses this problem by providing immediate affirmation and/or corrective feedback to the student while taking a test. Students always “exit” a question having selected the correct answer.

2. **IF-AT Improves Learning.** Students initially tested with IF-AT show a 20% increase in the number of correct responses when retested a week later on the same or similar material. Students initially tested with traditional multiple-choice forms show a slight decrease in the number of correct answers upon retesting. Research has indicated that with IF-AT, more than 60% of initial mistakes are answered correctly on follow-up tests. Without immediate feedback, initial errors are “learned”. Without immediate corrective feedback, students repeat errors 70%-85% of the time. In addition, studies reveal that developmentally delayed children initially tested with IF-AT retain as much or more, correct information one and three months later than do non-delayed children initially tested with traditional multiple-choice forms.

3. **IF-AT is FAIR:** Instructors can give partial credit for proximate knowledge. Partial credit for proximate knowledge is allotted on essay examinations; now it is also possible with multiple-choice examinations.

4. **IF-AT is FAST:** Students can score their own tests and they can determine their scores before they leave the classroom.

5. **IF-AT is ACTIVE and FUN:** Students “work through” mistakes to arrive at correct answers. Active learning is an important component of learning and retention – plus, IF-AT has game-like qualities, capturing students’ attention.

6. **IF-AT is RESPECTFUL:** IF-AT communicates to students that the instructor “cares” that he learns, that he is not just a test score. Traditional multiple-choice tests communicate that the score is of paramount importance; the student is allowed to walk away from the test in ignorance of many correct answers and, in fact, commit to incorrect ones.

7. **IF-AT builds on knowledge.** Since the IF-AT allows students to learn while they are being assessed, instructors can create unique tests in which later questions “build” on information from earlier questions without unfairly “penalizing” students for prior mistakes.
How do I use it?

Accompanying your IF-AT forms is an answer key for each version of the test form. Instructors apply the IF-AT system to a set of questions – whether a test, quiz, study guide, or exercise, creating a list of questions and arranging the answer options for questions to correspond to the forms being used (a key for each version of the IF-AT form is provided). The number at the bottom of the form identifies the particular version of the form.

How does it work?

1. Students read a multiple-choice question and the series of answer options. They then select the rectangle (marked A, B, C, or D) corresponding to their answer choice and scratch off the thin, opaque covering. If the answer is correct, a star appears somewhere within the rectangle, and the student receives full credit.

2. If the student selects an incorrect answer, the rectangle below the covering is empty. The student is instructed to re-read the question and the remaining options, and to try again. If the second choice is correct, a star or symbol appears beneath the covering, and a student may earn partial credit (amount determined by instructor). The student knew enough to be able to narrow the options, distinguishing him/her from another student who is simply guessing.

3. If a student’s second choice does not uncover the star, he/she is again instructed to re-read the question and the remaining answers, and to once again “Try, try again.”

4. The process continues until the student uncovers the correct answer, even if it requires that the student scratch off all possible boxes. The instructor determines the number of points allocated for correct responses on first and later attempts.

Key Points to Note:

Because a student “exits” each question knowing the correct answer, the IF-AT evaluation process also serves as a learning experience. Misconceptions are corrected and replaced with knowledge.

Research has shown that students remember (and tend to repeat) the last answer selected for each question – even if the answer is incorrect! With the IF-AT, the correct answer is always the most recent choice. Students learn the correct answer for EVERY question AS THEY TAKE THE TEST.

As an instructor, you will have a “window” into students’ thought processes and response patterns. The IF-AT scoring system allows you to allocate partial credit for proximate knowledge and to more accurately assess students’ levels of understanding and gaps in knowledge.

Our research at all educational levels has reliably demonstrated that “EDUCATING WHILE EVALUATING” with the IF-AT increases students’ performance on subsequent tests of related material. Students also rate the IF-AT higher on fairness, satisfaction, and ease of understanding than traditional multiple-choice tests.

Some students may worry that IF-AT commits them irrevocably to an answer (one cannot “unscratch a scratch”). However, students quickly grasp the system and learn to read questions carefully and thoroughly before they answer. They are also reassured by the opportunity for partial credit for second or third choices. Thus, the IF-AT also teaches good test taking and reading strategies.

An additional advantage of the IF-AT system is that the instructor can construct and organize test questions that build on previous questions. These “carry over” test questions permit the instructor to follow a student’s line of reasoning and to determine more precisely the location of “gaps” in a student’s knowledge.

We are confident that the IF-AT system will prove as effective for your students as it has for thousands of others. As an educator you are committed to improving your students’ education and the IF-AT is a powerful tool to accomplish just that.
Numerous studies have shown the effectiveness of using the IF-AT to teach while testing. However, the IF-AT has many more applications. Instructors might find this packet helpful in incorporating the IF-AT system into their classroom lesson plans. Included is a brief discussion about the IF-AT and some suggestions for its use. We encourage you to experiment with alternative ways in which the forms can be used to enhance the teaching/learning process for your students and for you! Share your ideas with each other and with us (see the contact information above).

**NOTE ON TEST SECURITY**

Prior to handing out forms to students for any use, it is very important that you separate the “code#” from the form, using the perforated line at the bottom of the form. Also, all forms should be collected from students at the end of an exercise.

**SEVEN SUGGESTED USES**

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**I. CHAPTER TEST – UNIT TEST**

Typically, 25- or 50-item IF AT forms are used. Note that no valuable class time is lost for review because students have already received feedback and corrected mistakes during the test. Students can score themselves.

**II. INDIVIDUAL STUDY – PRACTICE AND REVIEW (AT HOME OR IN CLASS)**

Use of the IF-AT for individual study is especially useful because parents as well, as instructors can note students’ understanding/retention of a relatively small body of information such as one chapter or topic. In addition, the IF-AT gives students the chance for more awareness of what they “know and don’t know”. Students score themselves. Parents and/or instructors can “eyeball” results because students cannot “unscratch” a scratch – the number of exposed boxes indicates the student’s degree of understanding. This strategy generally calls for using the 10- or the 25-item IF-AT answer sheet.

**III. QUICK QUIZ**

Most instructors use a 10- or 25-item IF-AT answer sheet. Students can keep score themselves and turn in answer sheets for recording.

**IV. PYRAMIDAL – SEQUENTIAL – PROCESS QUIZ**

Test questions are arranged according to the steps of a thinking process that the instructor wants the student to “pin down.” Here, the correctly mastered first question is the basis of the next question, and so on, as in the case of algebraic equations, geometry theorems, chemical analysis, etc. The instructor and student can pin-point the stage in the thinking process that the student misses; the IF-AT informs and corrects, and the student progresses to the next step of the “pyramid.” Most often, the 10- or 25-item IF AT is used. The instructor can identify common areas of difficulty among students and review a step in the process.

**VI. END-OF-QUARTER TESTS; END-OF-SEMESTER TESTS; END-OF-COURSE TESTS**

Typically, one or two 50-item IF-AT answer sheets are used. The great advantages of using IF-AT forms is that both students and instructors see that the learning from prior homework, review quizzes, and mid-marking period tests carries over to the final examination. Research has shown far greater retention of information, EVEN when test items have been reworded, if IF-AT test forms are used throughout the course. In addition, students also learn that the instructor is not merely interested in their test scores but expects students to learn, even during the final exam.

**VI. TEAM-BASED LEARNING (TBL) – COOPERATIVE LEARNING**

(Note: go to the IF-AT website (www.epsteineducation.com) to view an informative video on using the IF-AT for Team-Based Learning)

“TBL” has become one of the fastest growing teaching techniques in the classroom. Usually, groups of four to six students discuss complex issues - for example, diagnoses of symptoms or causes and or consequences of events and phenomena. Normally, the instructor appoints a group Moderator, a group Scribe, a group Reader, and a group Tabulator. Typically, 10-item or 25-item IF-AT test forms are used. The Reader reads the questions and options to the group. The Moderator focuses discussion and summarizes findings. The Scribe “uncovers” the group’s answers and reports results. The Tabulator keeps score. A great advantage of using IF-AT forms in group learning is that it quickly becomes apparent to participants that “loud and forceful” is not always “right”; each member is empowered by knowledge rather than personality.

**VII. STUDY-BUDDY LEARNING**

(COMBINED WITH DISCUSSION AND WRITING)

Study – Buddy learning usually uses the 10-item or 25-item IF-AT test form. Two students are paired, often, the instructor might match a stronger with a weaker student. Taking turns, students read questions and options for answers. If members of a pair disagree on an answer, they “argue” in support of their responses. Once the correct answer is uncovered, both students then discuss why the answer is correct. This method combines thinking, speaking, reading, writing, and cooperation about correct information with motivation and partial credit.

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PARTIAL CREDIT AND THE “LEARNABLE MOMENT”

In classrooms today motivation can be very low for students. As such, all instructors strive to achieve maximum engagement for their students. One of the most powerful tools a teacher has to accomplish this is to capitalize on the “learnable moment” – that golden moment at which a mind is most receptive to learning. This occurs when students are confronted with a problem which they consider, answer, and are then given immediate feedback. In addition, another equally powerful force in engaging students while test-taking is the ability to earn partial credit.

**Fusing the Two Together.**

This revolutionary system keeps students motivated to persist within this learnable moment by offering not only immediate feedback, but also partial credit for “proximate” knowledge and continued effort. A student who can narrow down a correct choice to, let us say, “a” or “b” knows more than one who merely guesses. This validation increases motivation. Thus, a student remains in the “learnable moment” throughout the answer-until-correct process of the IF-AT exam.

Just as instructors reward partial knowledge in essay exams, the IF-AT acknowledges a second, third, or even a fourth choice that is correct, decreasing credit at the instructor’s discretion. A student is motivated to read carefully, re-read and re-consider, and then to emerge from the challenge with the correct answer (indicated by uncovering a star).

**How much partial credit should instructors award?**

Research has shown that awarding ANY amount of partial credit is a motivator – this is the crucial issue. Teachers concerned about grade inflation not accurately reflecting a student’s deserved score may do well to consider the bigger picture as well - that test score inflation is insignificant contrasted with increased engagement, boosted confidence, and seized learning moments.

<table>
<thead>
<tr>
<th>On a 4-answer choice form (A-D):</th>
<th>On a 5-answer choice form (A-E):</th>
<th>NOTE: On Modifying tests:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example A</strong></td>
<td><strong>Example A</strong></td>
<td>To modify tests, e.g., for IEP students, you might want to use a 4-answer choice form (A-D), but offer students only 3-answer choices:</td>
</tr>
<tr>
<td>5 Points – first choice</td>
<td>10 Points – first choice</td>
<td>For Example</td>
</tr>
<tr>
<td>2 Points – second try</td>
<td>5 Points – second trial</td>
<td>1. What is the name of the school you attend?</td>
</tr>
<tr>
<td>1 Point – third try</td>
<td>2 Points – third try</td>
<td>a. CCMS</td>
</tr>
<tr>
<td>0 No credit – fourth try</td>
<td>1 Point – fourth try</td>
<td>b. --------</td>
</tr>
<tr>
<td>Example B</td>
<td>Example B</td>
<td>c. CCHS</td>
</tr>
<tr>
<td>5 Points – first choice</td>
<td>5 Points – first choice</td>
<td>d. NKU</td>
</tr>
<tr>
<td>3 Points – second try</td>
<td>3 Points – second try</td>
<td>5 Points – first choice</td>
</tr>
<tr>
<td>2 Points – third try</td>
<td>2 Points – third try</td>
<td>3 Points – second try</td>
</tr>
<tr>
<td>1 Point – fourth try</td>
<td>1 Point – fourth try</td>
<td>1 Point – third try</td>
</tr>
<tr>
<td>0 No credit – fourth try</td>
<td>.5 Point – fifth try</td>
<td></td>
</tr>
</tbody>
</table>
**FINAL NOTES ON . . .**

**A. Test Security**

There are MULTIPLE versions of each type of IF-AT form. Instructors whose institutions regularly use IF-AT forms might consult with each other about which forms they use in order to decrease the likelihood of overlap. Also note that IF-AT forms are perforated at the bottom so the instructor can easily separate the form code from the scratch-off part of the form: the IF-AT version of the form remains unknown to the student. The top of the form where students record their name, date, etc., is also perforated. THE SCRATCH OFF PORTION OF THE IF-AT FORM SHOULD NOT LEAVE THE CLASSROOM IN A STUDENT’S POSSESSION. Also, as with any test, students should sit as far away from each other as possible.

Some instructors of very large lecture classes use multiple versions (code numbers) of IF-AT forms in the same class, but color-code the question sheets that go with each. Then students sit alternatively, according to the color of their question sheet. Instructors can see at a glance whether two students with the same colored question sheets are sitting beside each other.

**B. Instructions for Matching and Scratching . . .**

Some students using IF-AT forms for the first time might be anxious about scratching in the wrong space, the wrong line, or not being able to change an answer. Therefore:

1. Students should be told to use the top edge of the question sheet (or any straight-edge) to insure that they are scratching on the correct line of the IF-AT form.

2. Students should be reminded to read the question and all options slowly and accurately.

3. Students should scratch carefully so as not to tear the answer form.

4. Students should be reminded that the star for the correct answer can appear anywhere within the box and therefore scratch the entire box.

5. Since students can earn points, EVEN if their first or second (or third) response is incorrect they should re-read the question and remaining responses and “IF-AT first they don’t succeed, try, try again.” They will learn, incidentally, to become more careful, accurate readers, to think before responding, and to persist in seeking a correct answer.

6. Students can use any of a number of “tools” to scratch off. Popular tools include: a penny, a tooth pick, a popsicle stick, the edge of a plastic student I.D. card, or the top of a Bic-type pen.

7. Students can determine their scores on IF-AT forms by neatly writing the value of their answers on the line to the right of each item and tabulating a running total of points earned. Instructors can check quickly for accuracy.

8. Students – and perhaps instructors, too – might assume that testing with the IF-AT takes longer than traditional multiple-choice testing. Actually, instructors report that, after the first time or a practice session, the increase in testing time is negligible. On the other hand, instructors gain time by not needing to spend valuable class time reviewing exams (“post mortems”). With the IF-AT’s immediate corrective feedback, students gain knowledge.

**Last Words....**

Instructors in many hundreds of schools, colleges, and graduate programs in the United States and abroad now use IF-AT forms. One attribute of IF-AT that makes it popular with students at all levels is its game-like quality. It is actually fun to take IF-AT tests, and students often ask that more be given! Students like a sense of being “in control” of the test and appreciate the opportunity of partial credit and the chance to “get it right,” emerging from each question with the right answer, and knowing their scores before leaving the test. Interestingly, researchers have not found this to be the case when students take traditional multiple-choice tests, whether they are paper, pencil or computer-generated. The IF-AT offers students and teachers the opportunity to enjoy the test-taking process!
“TEST MAKER” FOR THE IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (“IF-AT”)

One of the issues that teachers and professors who use the IF-AT have raised with us is how to adapt their quizzes, tests and other assignments to the various answer “versions” of the IF-AT. In response to this issue, we have developed a “Test Maker” to be used in conjunction with the IF-AT.

The Test Maker is a free and easy-to-use computer program that will allow teachers to adapt their tests, quizzes and homework assignments to each of the different versions of the IF-AT answer forms. Through a generous grant from a charitable foundation, the Test Maker is now available for teachers and professors completely free of charge on the Internet.

The web site address to access the Test Maker is: www.if-at.com/id5.html

This web page provides simple instructions for the use of the Test Maker and links you to the Test Maker program. For security reasons, you will need to be issued a user name and password to log onto the Test Maker. To obtain your user name, please contact us at haviva@if-at.com and they will help you with the initial setup. Again, please note that THERE IS NO CHARGE to use the Test Maker.

We hope you take advantage of the new Test Maker and that it assists in your teaching and testing of your students. In addition, please feel free to call or e-mail us with any thoughts or suggestions you might have to improve the IF-AT system; we are always seeking improvement.

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