MEASURE AND RECORD GOLF PERFORMANCE

OVERVIEW

Recording data on golf performance is a powerful but simple tool an instructor can use to diagnose accurately the problems of a golf student. It will help the student to measurably improve performance and sustain it at higher levels long term. Instructors and their students normally do not record data. They should.

Performance usually improves when golf instructors and their students quantify the performance they want, record on a form how often it occurs, reassemble the data to bring together shots with similar conditions, summarize the data for results and feed the data back to the student on a permanent or periodic basis.

In business and in golf combined, I have over 50,000 case histories of performance showing improvement on a before-and-after basis using the process above.

WHAT THE TWO DOCUMENTS PROVIDE

We are giving you two different types of documents to help you record performance data. This document is a booklet titled *Measure and Record Golf Performance,* which you can download, save, read, print, email or put in a mobile reader. It tells you what the benefits and procedures are. The other type of documents presents 16 or more completed recording forms, an explanation of each and a blank one you can use to make unlimited copies. Here is what the booklet contains:

CONCEPTS, BENEFITS AND PROCEDURES

This document has three main sections:

- **CONCEPTS AND BENEFITS**
  The first part (pgs. 1 to 6) gives you the *concepts and benefits* of recording golf data and receiving feedback on that performance.

- **GENERAL PROCEDURES**
  The second part (pgs. 6 to 8) provides you with *general procedures* to use in measuring golf performance, recording data and providing feedback to the golfer and instructor.

- **SPECIFIC PROCEDURES**
  The third part (pgs. 12 to 17) gives the golf instructor the *specific procedures* to use in recording data and getting the student to do it. We list them in the order you will use them. The student can also find this of interest because it states both what the student should do and the instructor.

2. **RECORDING FORMS: COMPLETED, BLANK AND AN EXPLANATION**
   The second document gives you 16 or more different recording forms. They are useful for reducing average score and in performance areas which are deficient in most golfers. It gives the instructor and student a completed recording form to serve as a model. It also gives you a blank recording form you can use to make unlimited copies. It includes a brief explanation of each recording form and the reasons why it is important.

THIS FIRST DOCUMENT COVERS THESE TOPICS

- ***Why*** **the instructor and the student should measure performance.**
- ***What*** **types of golf performance you can and should measure.**
- ***When*** **the measurement should occur.**
- ***How*** **to record the data, summarize it and calculate percentages simply and quickly.**
- **How to be successful in having the student record data.**
- **How *long* the student should continue measuring and reporting performance.**

GENERAL CONCEPTS

This section states the general concepts in the process of measuring and recording golf performance.

WHO SHOULD READ THESE DOCUMENTS AND USE THEM

All instructors should read and use these procedures with all students. All students should read this to know what they and the instructors should do to record performance data and to provide feedback for the rest of their playing careers.

WHY DOES MEASURING AND RECORDING DATA WORK SO WELL

Without recording this data, neither the instructor nor the student will have an accurate picture of the student's performance.

- ### OVERESTIMATING ONE'S PERFORMANCE
  With traditional golf instruction, neither party measures and records performance data on more than 5% of the lessons. In the absence of receiving data on performance, 80% of the golfers will overestimate their performance, often by wide margins. When you do not think you have a problem, you do not spend time on it, ask for solutions or experiment.

- ### JUMBLED SEQUENCE OF RESULTS AND NO USE OF A COMPUTER
  There is another reason why recording performance data works so well. During a round, you never hit the same shot twice in a row, unless you incur certain penalties. You go from a driver, to an iron, to a putter. No shot is the same distance, has the same lie or target and the results vary from shot to shot. Therefore, it is hard for a student or the instructor to store the data in their minds into neat data bins, constructed only to hold data for that type of shot. A computer can store and instantly recall data on thousands of shots, but the human mind finds that almost impossible to do.

REASONS FOR RECORDING DATA BEFORE THE LESSON

There are three reasons why the instructor should gather performance data *before* the lesson and have the student do so *during and after* lessons, and sometimes also *before* the lessons:

1. ### LITTLE OR NO OBSERVATION ON THE COURSE

   Before the lesson starts, most instructors do not observe their students perform during a round. The player's performance in the practice area is different than it is on the course, because the lie, target and psychological pressures are different.

2. STUDENTS DO NOT KNOW ACCURATELY WHAT THEIR PERFORMANCE IS

My extensive research shows the most golf students do not know what their performance is in most parts of their games, but they *think* they know. Worse, in the absence of data feedback, 80% of the students overestimate performance, often by wide margins.

They only know accurately what it is when they state it in measurable terms, record it, summarize it over many shots and receive cumulative feedback from that data.

This tendency to overestimate is not limited to beginners. It applies to all types of golfers, including professional stars, such as members of the Ryder Cup and the LPGA Hall of fame as well. For example, a PGA Tour star and member of multiple Ryder Cup Teams told me that when he missed putts that reached the distance of the cup, he missed on the high side of the curve to the cup 98% of the time. Wrong. It was 73% of the time. And it was not 73% of the misses on the *high* side. It was 73% — on the *low* side. As we all know, if a missed putt reaches the distance of the cup or beyond and gravity is curving it *away* from the cup (sometimes referred to as "below" the cup, the "low" side or the "amateur" side), it has no chance of going in the cup.

If on missed putts, the golfer thinks he is missing 98% of the putts on the high side when he is actually missing 73% on the *low* side, he makes no adjustment and simply repeats the same general aiming or stroking error.

A member of the LGPA Hall of Fame told me that she sank 95% of her six-foot putts for par. Wrong. She sank 54% of them at that time. Why practice or make any changes when you think you are sinking 95% of them, when it is actually 54%?

Some instructors and players react to this information by stating they would withhold summary information about the pattern of past errors so that the player would feel *optimistic* about the probability of success on the next putt.

While it is true the players need to be optimistic about making the *next* putt, they need accurate cumulative information to improve or to maintain performance at high levels. Just to maintain confidence, would you prevent a bowler from seeing or hearing that each roll of the bowling ball was in the gutter? No, of course not.

3. THE DATA STUDENTS NOW COLLECT IS NOT VERY USEFUL

Over 95% of the students rarely track their peformance prior to the lesson. The data they do collect on their performance during a round is of little use in identifying the exact pattern of errors. Therefore, if the objective is to achieve the largest reduction in average score — and it should be —instructors should not rely on what their students say is the biggest problem in their games. The instructor should measure the student's performance before the lesson starts, compare it to measurable standards, calculate the potential drop in average strokes per round and select the area offering the best potential for stroke reduction as the subject of the lessons.

For example, students might say they measure the total number of putts per round and/or the number of three-putt greens. A student might say she averages five, three-putt greens per round. But that data does not tell either the instructor or the player what the *conditions* were for the three-putt greens. In addition, both parties need to know what the cumulative *results* were on the putts, such as long or short, right or left, above or below the curve.

It would help immensely to know what the percentage of three-putt greens is by starting distance. What percentage of such three-putt greens stopped short of the cup versus long? What are the stopping distances and directions? What percentage missed right versus left? What percentage of the missed putts that reach the distance of the cup roll *below* the curve to the cup (gravity prevents such putts from going in the cup)?

The student might report on how many greens she hits. However, that reveals no data on the nature of the shots that missed the green. Are more of the misses to the right or to the left, long or short, how far away did their ball stop from the target and in what clock-hour direction from it? What ball-flight patterns caused this? The player has no data. Most players will answer a question on this, but they base it on opinion and not data. The answer is probably incorrect, often greatly so.

What is interesting is that the data the student and the instructor needs is available with a few strokes of a pen and without any delay in playing a round.

THE BENEFITS

Numerous experiments show that when the instructor and the student measure and record performance and provide accurate and timely feedback of the data, the following occurs:

- **A higher percentage of the instructor's students improve.**
- **The average score drops by a larger number of strokes.**
- **The improvement occurs faster.**
- **The student sustains the improvement longer.**
- **The student's performance is more consistent.**

Here are some of the many other benefits instructors and students receive for measuring performance before, during and after lessons:

1. FOCUS LESSONS ON THE HIGHEST POTENTIAL STROKE SAVINGS

When the instructor or student collects data on performance prior to the lesson, it will help them choose the area of the student's game that offers the largest potential for stroke reduction. The bigger the drop in the student's average score, the more lessons students take and the more referrals students give.

What area of the game offers the student the largest stroke reduction in the least amount of time? In a poll of the Top 100 golf instructors, 76% said the short game. My research shows they are correct. Yet in my surveys, only 14% of the lessons were on the short game. Obviously, in the majority of their lessons, instructors and students need to suggest more short game lessons.

The instructor and the student need a process for determining which area of the student's game offers the largest potential for saving strokes. That process, which I urge every instructor to use, begins by *measuring* the student's performance in all areas of the game, not by assuming the student's opinion is correct.

This measurement should start *before* either party makes a decision on what part of the game will be the subject of the lesson. Ideally, the instructor will collect it on the course during a round or mutltiple rounds. If that is impractical, the instructor should collect it in the practice area with the student hitting all types of shots from all types of lies and target conditions commonly found on the course.

The instructor, or a trained person, such as an assistant, senior or junior can observe, measure and record the data. The student can also do this if the instructor gives the

student my StrokeSaver scorecard to use during a round and a written instruction sheet, which is included in the package of recording forms in the companion document.

If little time is available to measure, the instructor should observe the student hitting 30 assorted shots, from putts. chips and pitches to iron and woods. That is not enough to have any great confidence in the data you collect, but it is better than basing it on the student's impressions, which so often are inaccurate.

2. **PROVIDES MARKETABLE PROOF OF STUDENT IMPROVEMENT**

   This data will give the instructor and the student proof as to whether, and to what degree, improvement occurred. Measuring performance during and after the lesson and comparing it to pre-lesson performance shows the instructor and the student how well the instruction is working. It is also proof to prospective students that the instructor produces measurable improvement in students.

3. **HELPS YOU SELECT BETTER SWING AND TEACHING TECHNIQUES**

   By providing data on how much it improved performance versus the pre-lesson levels — and versus other swing and teaching techniques — it helps the instructor select the best solution. Pre- and post-lesson data is rarely gathered and presented in instruction books, articles and video tapes.

4. **PRODUCES MORE LESSONS, HIGHER FEES AND GREATER JOB SECURITY**

   With data showing improvement, instructors who gather data and display it publicly will stand out like a beacon from other instructors. They will attract more students, be able to raise lesson fees and have both better job security and a resume that stands out from the crowd.

5. **PLAYER IMPROVES PERFORMANCE DURING SOLO PRACTICE**

   Research shows that having the student measure, record and summarize data during practice will tend to increase the number of balls hit, cause a desirable change in what type of shots the student hits and improve practice performance.

6. **INSTRUCTOR AND STUDENT OBSERVE MORE ACCURATELY**

   Whoever records data, becormes a more accurate observer of that performance. That applies whether one is recording the score by type of shot, the pattern of ball-stopping positions, ball flight directions, measurable swing and stance behaviors or mental thoughts stated by the student.

   Measuring performance during play on the course corrects the students' misperceptions of how well they are doing and leads to faster correction.

7. **FORCES THE INSTRUCTOR TO BECOME MORE SPECIFIC**

   The person recording performance data can only do this accurately if the shot results or the movements of the club or body are described in observable, measurable and objective terms. Thus, it forces one to be more specific. Rating shots on an arbitrary scale of one to five, for example, is too subjective to be useful.

8. THE STUDENT SELF-CORRECTS

When the student measures and records performance, it often provides the type of information which leads to student self-correction during solo practice and play. Only when the student self-corrects is that information called "feedback." For each swing behavior they advocate, instructors should provide the student with a matching self-correcting feedback system. At best, that happens on about 10% of the swing behaviors.

The absence of feedback is why so many students report they cannot "take the instruction to the course." If the instructor does not offer a feedback system one for each swing behavior, the student should ask for one. If none is offered, the student should borrow one from our forms document or invent one.

I SEE THE SHOT RESULTS; WHY RECORD DATA

The student sees the results of all shots, with the exception of those hit into a bright sun, a fog, or the trees. If you see most shots, why should you then record what the shot conditions were, the clubs used and the shot results?

The reason is that the minds of instructors and students do not re-assemble the data into neat bins of similar shots, summarize the data and calculate percentages for their results. For example, what percentage of uphill putts of 10 feet that broke to the right did the student sink in the past six months? What percentage missed right versus left? What percentage stopped short of the cup versus long? What percentage missed on the low side of the curve versus on the high side? My research shows that over many such shots, over many rounds and during practice, instructors and students do not recall this accurately.

You cannot improve the performance of the student unless you know precisely what the error patterns of the student are.

GENERAL PROCEDURES

WHAT DATA YOU CAN AND SHOULD MEASURE

In golf, a drop in the student's average score over a long period is the prime indicator of instruction results. For example, assuming the golfers play the same number of rounds, it is the most accurate predictor of money winning statistics on the PGA Tour. What is most important is not the student's swing or the student's newly acquired knowledge of how to swing. The most useful measure of lesson effectiveness is the change in the student's average score, achieved under similar conditions.

It is not how much "knowledge" the student acquired. It is not what the student learned about what was wrong with the swing. It is not how cleverly the instructor imparted knowledge. Nor is it how much the student likes the instructor.

In making the decision on *what* to measure, always start by determining what the average score, handicap or handicap index is before the lessons start and what the student thinks it could be with lessons and practice.

Then chain backwards step by step from average score to what causes it. Each cause then becomes a result with, in turn, its own cause. This logic tree is also very useful to you in selecting what to *correct*, as well as in what to *measure*.

CHAINING BACKWARDS

From the examples of recording forms we provide in the other documents, try to select one or more measures of the following student performance. This is our list of general performance areas to measure, arranged in a backward chaining order, starting with the most important:

Here are the major areas to measure, listed in a logical, backward-chaining process:

1. SCORE

What is the student's average 18-hole score, handicap or handicap index?

2. SEGMENT OF HOLE SCORING

How many shots on average does it take the student to hole out from some specific distance and lie on the hole, other than from the tee? For example, how many shots on average does it take to hole out from 30 yards out of light rough?

3. BALL-STOPPING PATTERN

For many shots of a similar distance bracket or club, what is the ball-stopping pattern by distance and direction of the ball from the target?

4. BALL FLIGHT

- **What is the direction of initial flight ball flight in relation to the intended starting line?**
- **What is the direction of any later curvature on that actual flight path?**

5. CLUB

You infer the following two questions by observing carefully the ball flight in relation to the intended starting line and the target and by applying the ball flight laws.

- **What was the direction of the clubhead at impact?**
- **What was the direction the clubface was looking at impact?**

6. BODY

- **What crucial body movements occurred that caused the above club movement. They should describe the body movements so that they are observable, measurable and stated so clearly that there is no disagreement as to whether or not it occurs.**
- **Subordinate to that, what were the stance, grip, aim and alignment that affected those scores, ball-stopping positions, ball flights and clubhead path and clubface movements at impact.**

7. MIND

- **Based on the student's statements made prior to, or after, the shot, what did the student say, visualize or feel that affected the above performance areas?**

However, in diagnosing a shot or swing problem, most students and many instructors mistakenly skip these steps and jump to one of the last steps in the chain. For example, the student dubs a shot on the ground and immediately jumps to Step 7, "I was not concentrating." Completely ignored are all the prior steps.

WHEN SHOULD RECORDING DATA OCCUR AND WHO DOES IT

This should occur:

- **BEFORE THE LESSON STARTS**

  Measuring and recording performance should occur *before* the lesson starts to identify what the largest potential is for stroke reduction. It should also pinpoint the exact result, club movement, swing behavior, address position and thought process they wish to change.

- **DURING THE LESSON**

  The students should record performance data *during* the lesson under the watchful eye of the instructors to learn data collection methods and to improve during the lesson.

- **DURING SOLO PRACTICE AND ROUNDS**

  The student should record data during all *solo practice sessions and rounds played,* or a representative sample. The student reports this data to the instructor at the next lesson and after the lessons stop. Though data collection can become periodic, as opposed to continuous, the golfer should continue recording data for as long as the golfer plays the game.

COMPARE THE DATA TO WHAT

Compare the present performance to one of more of these: (a) the pre-lesson performance data for this student, (b) an arbitrary goal you and/or the student set, (c) what amateur golfers average at various handicap levels or (d) what professional PGA and LPGA tournament golfers average as a group.

It is not enough to look at the data the student collects from one round. Show longer-range trends from many rounds or practice shots on a graph, a table of figures, or some other graphic display.

IMMEDIATE FEEDBACK OF THE DATA

To be most effective, the data should be available to the student on an immediate basis. If it cannot be immediate, make the return of data rapid. If the player sees video of his swing in the pro shop after hitting 10 shots, that would be delayed feedback. If the player saw the video as he or she swings, which is now possible with some exotic equipment available indoors, the feedback would be immediate. In the latter case, the player can see and feel the move as he is receiving the feedback.

The accumulation of meaningful patterns of data permits *feedback* of it to the student on a rapid or, better yet, an *immediate* basis. For example, if the player finds through recording data that 10 of the 12 "first" putts missed the cup to the right, that player will probably make a correction on the remaining putts in the round.

DESIGNING A NEW RECORDING FORM

The recording forms we are supplying to you should be helpful for many common and important performance areas. In another document on this web site listing 16 or more forms, you can download any or all of them and make unlimited copies of them, see a completed example and read an explanation of why and how you should use each of them..

However, you may want to design your own forms in certain specialized situations. If so, design them so you and the student only record numbers, letters or symbols, such as arrows or tick marks.

If you need to design a new one, here are some tips. You make recording data easier when you design a form that requires the person recording the data to merely enter a letter of the alphabet (Example: Y for Yes or N for No), a number, or a symbol, such as a tick mark or an arrow for shot direction.

Once you have converted an observed performance into data, summarize the *data* into meaningful patterns for the player. You will normally summarize the data and calculate percentages and averages. For example, the percentage of putts sunk from a distance of six feet.

SPECIFIC PROCEDURES

BEFORE THE LESSON STARTS

This section tells the instructor step-by-step the sequence for measuring and recording golf performance. The purpose is to start a student recording performance data and have the student continue it long term.

1. MAKE COPIES OF ALL BLANK RECORDING FORMS

Go to our document that contains examples of 16 or more recording forms. Find the blank copy and make enough copies of it so that you always have some for both you and the student to use. This is helpful when you give unexpected lessons or make unplanned changes in the topic of the lesson. Particularly make enough copies of these forms with this name and form number: Aim and Alignment (Form 1), Ball Flight Characteristics (Form 2), Stopping Distance and Direction From Target(Form 9), Chip Shots Stopping Distance From Cup (Form 3), Putting Feedback Only Form (Form 14). Be sure to read the explanation for each form.

Place the copies in a secure case, folder or zip lock bag to protect against wind and wet conditions.

Office Depot has a plastic, low-profile clipboard that holds 100 paper sheets. It sells for about $10. Becky Dengler, an LPGA teacher in Wilmington, DL has used one and can tell you if it was useful.

2. DEFINE IN SPECIFIC TERMS ANY NEW PERFORMANCE

We already provide you with 16 or more recording forms to measure various performance areas. However, you may wish to add one we do not list. If so, here are some tips on how to *describe* the performance.

Describe the performance you wish to track in terms that are (a) measurable, (b) observable, (c) objective and (d) positive.

For example, this statement meets those four characteristics: "At the finish of a full swing, the student should finish with the back foot at 90 degrees to the ground, resting it on the toe of the shoe, not the ball of the foot." This is measurable and observable. It is *objective;* that is, every observer will agree whether or not it occurs. Finally, it states the swing behavior you want in *positive* terms, what the student is to do correctly on the next swings, not what the student did incorrectly on past swings.

Note that it is *not* a *subjective* description. If it were, everyone would interpret it differently. For example, a subjective description would be, "The student should have a "good finish position." No one would understand what "good" is or exactly what parts of the body are involved in the "finish position" or where to position them. Nor would you state how well you would rate the finish position on a scale of one to five, with five being perfect.

3. EXPECT ALL STUDENTS WILL RECORD DATA

As is typical with many of us, you will likely go slow at the outset in introducing measurement and recording. However, you should aim to do it eventually with all students and all lessons.

If instructors ask students to measure and record their golf performance, what can they expect students to do?

Instructors should not make a decision in advance that a student will refuse to record performance data. I found that when I worked on the lesson tee with instructors and their students, the instructors were usually pessimistic and incorrect in their prediction about whether the next student would record data. *Expect all* students to do it. *Ask all students to record data.*

However, you must state the specific benefits the student will receive by recording data. In addition, you must prompt the student to do it when the moment arrives to do it. You should also provide positive consequences when the student takes the slightest action to do it.

BEST PROSPECTS

Those managers and supervisors in business who see the benefits of measuring performance in their companies are candidates for recording data. They will agree with you strongly if you repeat a well-know management adage, "If you cannot measure it, you cannot manage it."

Those who want to play as well as they can on limited time often respond to this long-term measurement message, because they will play better than they would otherwise.

Those involved in using numbers in their business, such as mangers, executives, accountants and CPA's are better prospects, as are mathematicians and scientists.

Men and women who balance their family's checking account and know the value of measuring expenditures are natural candidates.

Parents who wish to encourage their children to excel in golf, perhaps to make a school team or seek a professional golf career, are excellent people to approach with this measurement message.

If the instructor makes a game of it with prizes and awards, younger children will respond well to measuring their performance to win a prize against other child or another team of children.

The best prospects for *long-term* measurement of golf performance are those competing on school teams, attempting to qualify for one of the professional tours or improving their games in an attempt to qualify for a city, state, regional or national tournament.

But do not limit your student prospects for recording data by approaching only the above types of prospects. Approach all of them.

4. WHO RECORDS THE DATA AND WHEN

For the student's *pre-lesson* performance, it is better to have a second party record the data. That is because the mere act of measuring performance makes the student more aware of error patterns, which sometimes causes the student to improve. That is a good result, but the purpose of pre-lesson measurement is to find out *what it is*, not to *improve* it prior to the lesson.

Therefore, the instructor, or someone trained and paid by the instructor to do this, such as a skilled junior player or a senior, can do the measurement. But having the students measure and record their performance is better than not having any pre-lesson data.

However, the *student* should do all of the recording of performance data during the lesson. This builds the student's knowledge of how to do this and provides practice in using the form and recording data. It gives the instructor an opportunity to observe whether the student does it and does it correctly. It presents a positive student behavior to the instructor, which the instructor can and should praise to make it more likely to re-occur.

The student, of course, also records data during all solo practice sessions and rounds played.

A golf coach at a famous university told me he has the relatives of the golf team members follow the players around the course and record the data, instead of the players doing it. It is useful to have relatives measure the team members performance and provide them with the data.

What would be even better would be to provide it immediately during the round, rather than after the round. In that way, the player could still make a correction during the round. The players should measure their own performance immediately during the round. Some coaches allowed their players to record data *after* the round was over. They encountered opposition, because the task seems more time consuming when the players have to enter all the shots at one time.

5. SELL STUDENTS ON BENEFITS OF MEASURING AND RECORDING

Here are the points the instructor should read or recall (possibly with brief notes) in selling the student on the need to record data on golf performance:

Tell the students that golfers cannot rely on their memory to provide an accurate impression of their performance in any part of the game. For example, can the student recall accurately what percentage of their 10-foot putts missed below the curve to the cup in the past year?

Tell them these stories:

- **A woman in the LPGA Hall of Fame and a former US Amateur champion who had not collected data thought she sank twice the percentage of six-foot putts for par than data Ed Feeney collected on her performance.**
- **A member of multiple U.S. Ryder Cup teams thought that 98% of the putts he missed that reached the cup curved on the high side of the curve to the cup. It was 73%. In addition, he missed 73% not on the high side, as he thought, but on the dreaded low (amateur) side of the curve.**

- **If they do not know what their performance is, imagine how it is for the rest of us.Tell them the problem is that during a round, each successive shot is at a different distance to the target, with a different club, lie and result. Computers can accurately sort all of that, group it in a split second and spit out a table or colorful graph, but our minds cannot.**

- **State that Ed Feeney has over 50,000 case histories in business and sports combined. In about 80% of the cases, the individual overestimated performance, often by gross margins.**

- **That is why we need to measure performance, record it, accumulate the data and summarize it.**

6. NO FORMS? USE SCORECARDS OR BLANK PAPER

There will be situations when you unexpectedly give a lesson and have no forms. In such cases, use a blank scorecard, a piece of paper and draw a form on it. The important point is to record the data, not necessarily to make it look neat.

7. WHAT STUDENTS ARE LIKELY TO DO

If you follow the methods under the previous heading, you can expect virtually all students to measure and record data during the *lesson*, though they may need considerable prompting and reinforcing to begin to change this behavior. If you explain the benefits to the student for measuring performance, the majority state they like those potential outcomes.

However, measuring performance is a slight bit of work, which is a minor negative. However, when the student experiences the benefits of measuring performance and you reinforce any positive behavior on their part, it usually overcomes the disadvantage of additional work.

During a lesson, they will record data if you provide them with a form, a pen and a verbal prompt to record data on the previous shot. If you reinforce them each time they record data, that behavior will increase in frequency. To start with, you will have to do considerable prompting and reinforcing to jump start their recording behavior.

SPECIFIC PROCEDURES

DURING THE LESSON

1. EXPLAIN HOW TO FILL OUT THE FORM

Carry a completed copy of the form and possibly the explanation for it, especially for any abbreviations. Demonstrate how to fill it out and observe closely what the student enters, especially at the start.

2. PROMPT THE STUDENT TO RECORD DATA DURING THE LESSON

To begin to change the student's behavior:

- **Prompt the student to measure or observe the ball, club and swing accurately and record data immediately after the shot on one of our recording forms. Since it is a new behavior, they are most likely to forget to do it after some shots. Just prompt them again to do it and reinforce them when they do, even when you prompted it.**
- **Have the student record data at the outset of the lesson. In this way, you can train the student and prompt a correction. Be sure to reinforce any positive recording behavior and any improved swing or result by giving praise, smiling, making a gesture of approval and commenting in an enthusiastic voice.**
- **Issue the verbal prompt, just seconds before they are to do it during the lesson. Keep prompting them to do this until they do it without a reminder. Then *gradually* reduce the percentage of shots that you prompt them in advance to see if they do it after every shot.**

3. RECORD DATA IMMEDIATELY AFTER THE SHOT

The student and the instructor observe the performance and one of them records the data *immediately* after the shot or a few shots, *not after the hole or round* or a large number of shots in the practice area.

The observer records the data immediately for three reasons.

- **This reduces the proven tendency to make error entries when one tries to recall and record multiple shots at one time.**
- **The student is more apt to improve faster because of an earlier awareness of the error pattern.**
- **It is easier to record data during the many waiting intervals that occur in a round while another player hits a shot or you are riding in the cart or walking. If you wait until the round is over, when the number of shots to enter now ranges from the 60's to over 100, it is too easy to say, "It is too much work to record all of my shots now."**

IF THEY DO NOT WISH TO RECORD DATA, TRY THIS

If you have a student who does not record data, try the following experiment. Have the student hit at least 10 shots, preferably 20 or more. Instead of the student recording data on each shot, you do it.

***After* the student finishes, hand them a form or blank piece of paper and ask them to write what they remember of their shots. That could be the number of shots that took a specific ball-flight direction (How many started to the left and curved right?). Or how many putts stopped short of the cup, missed right of the cup? How many missed putts that reached the distance of the cup rolled on the low side of the curve? If the student says he or she does not know - and you do, it might spotlight a benefit to the student for recording data.**

Another tactic is to ask the student to hit 20 shots and afterwards ask the student to try to recall the data on each shot, or the cumulative total for all 20. If the student has trouble recalling that data, and they should, make a tactful pitch for recording the data, instead of relying on memory.

4. IF NO RECORDING OF DATA, COUNT ALOUD

If the student does not wish to record data during a lesson, then the student should count it aloud and attempt to recall cumulative totals. For example, if the student has been chipping short of the cup, you might have the student count aloud after each shot how many are short and, separately, how many are long. "OK, that is now 8 short and 3 long."

Announcing it aloud and accumulating the totals without making a written record has its limitations. The student may suddenly forget the running total in the middle of hitting the shots, The student will usually not retain the totals long term and, thus, will not be able to analyze accurately whether she is improving or not and by what degree. Finally, few students can accumulate accurately multiple results on the same shot. However, this is better than not stating it aloud, because when the student is silent, you cannot tell if the student consciously noted the result.

PRAISE THEM FOR ANY OF THE FOLLOWING

If the instructor is enthusiastic and specific in praising the student for recording performance data, studies show that the amount of recording behavior tends to increase. Here is what the instructor should look for and praise when it occurs. If it does not, prompt the student to do it just before it is to occur and state the potential benefits. One prompt is to hand the student the recording form and a pen.

WHAT RECORDING BEHAVIOR TO REINFORCE

Comment favorably about it, smile and demonstrate by voice and gesture that you are pleased whenever the student:

- **Records any performance, even when you prompted it.**
- **Initiates the recording after a shot without you prompting it.**
- **Enters some or all of the data correctly.**
- **Makes the entry immediately after the shot.**
- **At the end of the lesson, places the completed and blank forms in the golf bag, protected within a zip lock bag, so as to be readily available at solo practice sessions and rounds played.**
- **After a prompt from the instructor in advance of the lesson, the student brings the blank forms to the next lesson in the golf bag.**
- **Tells or shows you the student recorded data when practicing or playing without you.**

THE STUDENT TAKES A POSITIVE ACTION USING THE DATA

- **Reports, sends or gives you data after solo practice or a round.**
- **Notices an error pattern she did not recognize before.**
- **Asks for a solution to that newly recognized problem.**
- **Improves her performance because of collecting data.**

5. RAISE AND/OR ANSWER THE OBJECTION: RECORDING INTERRUPTS THE LESSON

Instructors and students sometimes complain that recording data takes time. It is a bit like the objection drivers have to seat belts: It takes time to buckle and unbuckle the seat belt every time you get in and out of the car. It is a nuisance on short trips. True, but seat belts save lives and injuries. Besides, most accidents occur within a mile of one's home.

Remind the student that life is full of tradeoffs. Recording data does take time, but very little. Writing a tick mark, number or letter on a piece of paper or form is a small price to pay for identifying an unrecognized problem and improving long term.

SPECIFIC PROCEDURES

AFTER THE LESSON

1. FILE THE DATA ON HOW THE STUDENT PERFORMED

The instructor should file any completed recording forms or a copy of them in a folder for each student. In helps to refresh the instructor's memory of what they were working on. For students who have worked with the same instructor for a number of years, it is useful to remind them of how much they have improved. If they have not improved, it is a signal that one or both of you needs to change something.

2. RECORD DURING SOLO PRACTICE AND REPORT IT

During the lesson, always ask the student to record performance data during solo practice sessions. State the benefits of doing so and provide them with a recording form. Tell them to bring or send the form to you after each solo practice session. You will get a higher percentage of them to do it if you remind them again in person or by phone or e-mail prior to the first solo practice session. React immediately and positively to any forms the student submits, regardless of whether or not they immediately improve performance.

If you do those things correctly, most students will fill out a data collection form during solo practice sessions. However, you must prompt the behavior of recording data, remind them multiple times and reinforce any positive talk or action.

However, if you do *not* ask them to do this or praise them for doing it during the lesson, the odds of them doing it again drop substantially.

3. RECORD DURING ROUNDS PLAYED

Again, you will cause more students to measure performance during rounds when you are absent if you ask the students to do it. Tell them in advance you will ask for it at the next lesson, suggest that they fax, email or give it to you soon after the round. Praise any good student behavior that occurs.

If you play a few holes with them, prompt them to begin recording data and praise them when they do, you will be more successful in having them record data on the course during a round.

Avoid giving them too much to record at the outset. It is better to have them collect data initially on only one part of their game and later expand it gradually to other parts of the game.

4. RECORDING AND REPORTING AFTER THE LESSONS END

Students will perform better long term if they measure their golf performance for the rest of their playing careers. Instructors should encourage them to do so. However, as in other activities, such as in improving their knowledge for a business career, many people lack the ambition or time to make the effort.

You may also suggest that the student measure performance *periodically*, as opposed to continuously, for the rest of their playing career. You should tell them that measurement and feedback almost always leads to improved performance. However, when people then *stop* measuring for a period of time, my research shows that performance usually goes back to, or near, the level it was prior to the start of measurement.

A professional tournament player could ask the caddy to provide data periodically without telling the golfer what part of the game the caddy was recording data. This is because performers tend to do better when they know measurement is occurring, particularly when that person who is recording is likely to comment favorably on any improvement.

5. CONVERT A STUDENT TO LONG-TERM MEASUREMENT

It is not easy to get students to measure and record their performance long term. But the practice will grow as golfers realize it is a smarter, more effective, less expensive and longer lasting solution than what they have attempted in the past. Here is what you can do to make it more probable some of your students continue to measure and record long term:

- **The students must perceive that the *work* in measuring performance in various parts of their games is more than offset by the *benefits* they receive from the improvement that activity produces. You must point out the linkage between any resulting improvements they produce in their game and the cause of it: measuring performance and obtaining meaningful feedback.**

- **You must tell them that if they improve their performance through measuring performance, then stop the measurement, there is a high probability that their performance *will return to the pre-measurement level.***
- **Until the student sees these improved results over a longer period, the instructor must provide the main source of reinforcement until the improved results begin.**
- **Therefore, the instructor must praise the student for (a) any new or sustained measurement and recording activity, (b) for using measurement to analyze correctly the error pattern in results and the cause of those errors and (c) for any improvement in a shot, group of shots or swing behaviors.**

  Basically, you must give the student praise that is frequent, positive, enthusiastic and specific for any measurement activity, even for only a stated intention to record data or for any improvement in golf performance.

  If you ever had to push a car with the engine unable to start, you know it takes far more effort to get it rolling than to keep it rolling. Similarly, it takes more reinforcement from the instructor to have the student start measuring and recording performance than it does to have the student continue it. Therefore, the instructor must continue reinforcing the student for this activity for a considerable period of time, even after lessons stop.

6. POST THE TABLE OR GRAPH WITH BEFORE-AND-AFTER IMPROVEMENT IN A PUBLIC PLACE

With the student's permission, post the before-and-after improvement in the form of a data table or colorful graph. You need not post the students name, only the initials or the first name. It would be useful to have examples posted that show improvement in all phases of the game by many students. You could also post the data collection forms, such as the chart with the concentric circles showing the distance and direction for shots of a certain original distance to the cup. Since golfers probably have not seen the forms, it would attract more attention to you and your methods.

FINAL COMMENT

I want you to excel as an instructor and as a player. Let me know of your successes, questions or problems in measuring golf performance and recording the data. Please spread the word about these ideas to other instructors and players. We need to change how the world applies golf instruction. Please contact me by email about what you like about this process and what we can do to make it clearer or more helpful.

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