

Chapter 3

Teachers Should Not Waste Time Writing Behavioral Objectives~

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Abstract

For several decades instructors have struggled with stating objectives in terms of conditions, criteria, and behavior. There are files full of carefully stated Mager-style objectives. There are organizations that collect and publish volumes of objectives that are precise in form. Yet many of us continue to use tests which measure only memory (regurgitation is the student word). For several decades we have concentrated on format and worried about substance. If you really want to measure "understanding," "comprehension," and "appreciation," this chapter is for you. If you are more concerned in knowing what your students really know, as contrasted with what you are stating in carefully worded behavioral objectives, then this chapter is for you. This chapter is dedicated to the proposition that "Teachers should not waste time writing behavioral objectives."

Preface

Mager's short classic, *Preparing Instructional Objectives* (Mager, 1962), was prefaced by the fable of the sea horse. It seems that a sea horse went forth to seek his fortune. On his way he met an eel who offered him a speedy flipper which would enable the sea horse to travel at twice the speed. The sea horse was very pleased with his ability to swim faster and sped happily on his Journey. Sometime later he met a sponge. The sponge offered him a jet-propelled scooter. With the scooter the sea horse was able to zoom through the sea at five times the speed.

An unpublished manuscript written in 1977 by the author for a series of workshops on college teaching .

As he sped through the sea with his scooter he met a shark. The shark told the sea horse that he knew a swell short cut and he pointed to his mouth which was opened wide. Thanking the shark the sea horse zoomed off into the shark's belly, there to be consumed. ""The moral of this fable,"" wrote Dr. Mager, ""is that if you're not sure where you're going, you're liable to end up someplace else—and not even know it.""

An Annoying Dialogue

(First meeting)
Instructional Developer: Professor Schmidt, we are pleased to be able to help you with your instruction. Read this book by Mager and write down your objectives. We'll review them the next time we meet.

(Second meeting—delayed twice because the objectives weren't written.)
Instructional Developer: Professor Schmidt, I appreciate the time you must have spent writing these objectives. However, they seem to all be at the memory level. Do you only want students to memorize? See if you can't include some ""higher level"" objectives."

(Third meeting—delayed three more times because Professor Schmidt didn't know what to do.)
Instructional Developer: I was afraid you didn't want our help. Are these your higher level objectives? (The developer reads them with knitted brow.) ""Understand"" is not a behavioral word, neither is ""really comprehend."" It is difficult for me to help when I don't know what you want your students to be able to do.
Professor Schmidt: (Under her breath while leaving the Instructional Development Office) Behavioral objectives are no ~X!~#! good!

Another Fable

Once upon a time a sea horse was about to set forth to seek his fortune. Before he left, a wise old starfish took him aside and gave him some sage advice. ""You must be very careful out there in the world. Many will try to help you. They will offer you flippers which will enable you to swim much faster. Others may offer you high technology scooters which will enable you to zoom through the water at ten times the speed. But beware! Many have bought these innovations and have still been swallowed by sharks.""
""Before you go zooming off through the sea you must have a plan, you need an objective. A good objective must tell you where you want to go and how you can tell when you've arrived.""

""Fantastic"" said the sea-horse."

So he spent the summer writing objectives. Each was carefully written according to the advice of the wise old starfish.

When fall came he left to seek his fortune. Before long he purchased flippers and swam much faster. Later he bought a scooter and zoomed off at ten times the speed.

Then he meet a shark.

""Psst,"" said the shark. ""Come here and I'll show you a short cut.""

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""Ah ha"" said the sea horse. ""I have some objectives. I don't need your short cut. My"

objectives tell me where I'm going and how I'll know when I've arrived.""

""Say, those are fine objectives,"" said the shark. ""Swim right in here,"" and he promptly"

swallowed the sea horse, flippers, scooter, objectives and all.

""Hey,"" said the sea horse. ""Now what?""

Moral: If you have adequately stated objectives, you may think you know where you're going and may still end up somewhere else.

So? In the words of the sea horse, ""After Mager, what?""

This chapter is dedicated to answering that question.

Tell 'em A

But Test 'em B

Even though we often state ""understanding"" as our goal, we usually test memory. If"

you gather up a random sarnple of final exams from a wide variety of fields, you will find

that the performance most frequently required of the students is to remember a set of

facts, a definition, a set of procedures, or the statement of a rule.

The following items were haphazardly selected from a number of final exams used at

a major University:

List three ways in which the transcontinental railroads were subsidized by federal and state governments. (History)

Identify or define the following names or terms: Mark Twain, ""white man's burden""

(History)

n~.An,.A thA OtAr~ r f3ccf3nti~1 t~ nr~hl~m~cnlvinn or decision-makina.

L I S I I n S t u, u ~ v u ~. v ~ -- r ~

(Career Education)

Complete the following quotations: Adam fell that men might _ and men are that they

might have . (Religion)

Sketch the schematic for a flashlight. Use 2 cells in series, and tell what the

voltage is.

Use a switch and tell what type it is. (Industrial Education)

Define slang, gobbledegook, shoptalk, jargon. (English)

To illustrate the """"Tell 'em A but test 'em B"""" phenomena in even more detail, let us"

consider a complete test from a unit on the short story from a literature class.

The Short Story

Prior to taking this test, the students were required to read 16 short stories. Class

meetings were used to discuss various characteristics and devices used by the authors in

writing their stories. Particular stories were used to illustrate particular concepts as

indicated in the following list. The other stories were not discussed in class.

The Adventure of the Speckled Band (Doyle)

The Case of Amontillado (Poe)

Bargain (Guthrie)

The Most Dangerous Game (Connell)

Plot

Setting and Irony

Characterization

Plot, Setting,

Characterization

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An Underground Episode (Ware)

The Life and Death of a Western Gladiator (Finney)

Turkey Red (Wood)

Indian Burial (Doner)

The Scarlet Ibis (Hurst)

The Ransom of Red Chief (O. Henry)

By the Waters of Babylon (Benet)

The Fifty-first Dragon (Broun)

Little Yellow Dog ~ Barr)

The Last Lesson ~ Daudet)

The Blue Serge Suit (Lan~don)

The Slip-Over Sweater (Stuart)

Symbolism

Symbolism

Humor

We will consider possible objectives for this unit after we consider the test.

(1) Sample Test—The Short Story

Section 1. For each of the following, write the missing word in the space to the left.

Plot _ 1. The pattern of events in an narrative is called the _

Climax 2. The decisive action, or turning point, in the plot of a narrative is called the

Conflict _ _ 3. The interplay between opposing forces in a plot is called the

Nature 4. ""Turkey Red"" is a story which portrays a conflict between men" and _ .

Men _ _ 5. ""Bargain"" is a story which portrays a conflict between"

Inner 6. A story may describe a character with a personal dilemma, a character who is struggling against himself. This struggle is called an conflict.

Section 2. For each of the following, circle the letter of the best alternative.

Characterization is best described as:

a. the technique used by an author to develop personalities of people in a narrative.

b. the technique of creating mood by describing the characteristics of the persons in the story.

c. the process of describing the location background of the story to give it character.

d. all of the above.

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b.

c.

d.

a.

b.

c.

d.

The main idea of a literary work is known as:

characterization

theme

climax

plot

3. Which of the following is not a way that an author reveals character?

descriptions of appearance or personality

descriptions of the place where the story takes place

descriptions of the character's actions

descriptions of what a character says

4. The best way to develop character is:

descriptions of the character's appearance and personality

descriptions of the character's actions

dialogue or monologue of the character

all of the above

Section 3. Write a short answer for each of the following which are based on the

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story "An Underground Episode."

What do we learn about the boy as the story opens?

What circumstances lead to the boy's volunteering to go through the pipe?

Why did he volunteer: by forces within him or by forces around him?

What one incident after the boy had started through the pipe brought him the greatest comfort? What is the relation of that incident to the final paragraph of the story?

What are your principle emotions as you read this story? What particular details caused you to have these emotions?

Explain what Stender implies by the words "If he didn't make it all right." Why does Laska respond, "Forget the pipe."?

(End of Test on Short Story)

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Content Structure and Organization

Is this a typical test? Compare it with tests which your colleagues are using.

Compare

it with your own tests. Chances are good you'll consider it rather typical. You may even

be thinking "This is a pretty good test." Look at the questions in Section 1. Items 1, 2, 3,

and 6 each require the student to give a technical term for the definition given. Items 4

and 5 require more than memory in that they ask the student to recognize the nature of a conflict in specific stories.

What do you think was the objective for this section of the test? Educators have often

indicated that the real objective for the student is the test. Therefore, we ought to be able

to work backward (if you think that objectives should come first it's backward) and state

objectives for these test items.

Literally the objective tested by items 1, 2, 3, and 6 is as follows:

(A) Given a definition of plot, climax, conflict, and inner conflict (the conditions) the

student will remember and write each term opposite its definition (behavior—the criterion

is not stated, but is inferred at 100%).

Probably the instructor had a more general objective in mind such as the following:

(B) The student will be able to define the principal parts of a short story including

plot, climax conflict, setting, theme, characterization, etc.

In keeping with recommended practice, the test does not try to test all of these ideas

but only samples the student's knowledge. (We intend to challenge this recommended

practice later.) It is assumed that if the student answers the questions which are asked, he

is likely to know the definitions of the terms not tested.

But is this really the objective of the instructor? Do you know a literature teacher who

would be satisfied with saying that all he/she wanted the students to know was the

definition of a few technical terms? I don't! It is much more likely that the real objective of

our instructor is something like the following:

(C) The student will understand the principle characteristics of a short story and how

they are used to construct the story.

But, you object (if you are a reader of Mager), this is not a behavioral objective. What

does a student do when he understands? How does one construct a test which measures

""to understand?""

Below is an alternative version of the first section of our sample test on the short story.

Is this more consistent with your idea of the meaning of the verb ""to understand?""

(2) Sample Test—The Short Story

Section 1. We did not discuss the story ""The Slip-Over Sweater"" in class. Using the"

following outline as a guide, analyze the plot of this story.

1. Describe the conflict.
2. Using one-sentence descriptions, indicate the main events in the plot.
3. Identify the climax.

Is this better? Most English teachers would prefer an essay format. An essay format seems to require understanding. But does it always? This question seems to require understanding rather than memory, but how would you score a paper in which the student responded as follows:

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A good story involves a conflict. A conflict means that one thing conflicts with another, such as a man against another man, a boy and a girl, or even two boys who want the same girl. In this story Shan wants JoAnne to be his girl but later decides that Grace is a better person. A good story ends when the conflict is resolved. This is called a climax. It is near the end of the story.

Rather than citing the nature of the specific conflict in the story, this student has merely defined the term conflict. The student has also defined the term climax rather than indicating the specific event which comprises the climax of the story being analyzed.

Did the student answer this way because he didn't know the answer? Or, did he think that the instructor wanted him to define the terms? Whenever a student is left to his own structure, there is always the possibility that he will misinterpret the question.

Furthermore, his ability to demonstrate his understanding is limited by his ability to express himself in writing.

The following is a third version of the first section of our sample test on the short

story. Is this better?

(3) Sample Test—The Short Story

ection 1. Answer each of the following by circling the letter opposite the best alternative.

1. The conflict in the story "The Slip-Over Sweater" is best described as

follows:"

- a. A struggle between Shan Stringer and Roy Tomlinson for the affections of Jo Anne Burton.
- b. A struggle within Shan Stringer to be the boyfriend of the school's most popular girl or to be loyal to his life-long but less flashy girlfriend.
- c. A struggle within Grace Hinton to give up her love for Shan or to fight to regain his love.
- d. A struggle between a popular girl, Jo Anne Burton, and a quiet girl Grace Hinton.

2. Below are some very brief summarizations of some of the events of the story,
""The Slip-Over Sweater""

- (1) Grace and Shan's conversation about Shan's possibly not getting sweater.
- (2) Shan's decision to borrow money from the bank.
- (3) Shan's giving his sweater to Jo Anne.
- (4) Roy's giving his returned sweater to Grace.
- (5) Shan's struggle to repay the loan.
- (6) Shan's overhearing of Harley Porter's praise of Grace's character
- (7) Jo Anne returning Shan's sweater when he became worried over his debt.
- (8) Grace's plan to assist Shan to earn the money.

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Content Structure and Organization

Which three events are most significant to the conflict involved in the story?

- a. Numbers (2), (3), and (5).
- b. Numbers (1), (3), and (7).
- c. Numbers (3), (7), and (8).
- d. Numbers (4), (6), and (8).

Which of the following quotations best identifies the climax of the story
""The
Slip-Over Sweater?""

- a. I didn't know what she was thinking as we started down the path, and she didn't know what I was thinking. I didn't ask her; she didn't ask me. But I was thinking that our school days would soon be over and I could

build a house, if she'd want it there, right on Seaton Ridge on the path that leads from her family's house to mine.

b. We stood silently on the mountain path and looked at each other. "I couldn't wear it yet," she had said. And that was all the promise I needed. I knew how fine she was; and I was proud that she would not discard Roy Tomlinson's sweater as Jo Anne had done, without a word to him first.

c. "Take off Roy Tomlinson's sweater," I said. "I'm awfully tired of looking at it." "But what will I do without it?" she said. "It keeps me warm." I didn't answer. I started to pull off mine. Then I felt her hand on my arm. "No, Shan," she said. "Keep it awhile. I couldn't wear it yet."

Do you have a bias against multiple-choice questions for measuring understanding?

many people do. Is this multiple-choice version any better than the essay version?

Note that the structure of the two versions are very similar, i.e., both ask the student to

identify the conflict, the key events of the plot, and the climax.

In the essay question the students must remember and retell the climax and the key

events of the plot. In the multiple-choice question students must recognize and identify

these parts. As we have already indicated, in the essay situation there is more chance for

misinterpretation or incomplete answering. On the other hand, the multiple choice

requires less memory. But, what are we trying to assess? If our goal is to test understanding of the conflict, plot, and climax of the story then perhaps the

multiple choice version is less confounded by possible misinterpretations and inadequate

written expression. Working backward once more, what is the objective that is implied by

either the essay (2), or multiple choice (3), versions of the first section of the

test? How about the

following:

(D) Having read a short story which has not been discussed in class, the student will

be able to outline the plot by identifying the forces or persons involved in the conflict, the

critical events which lead to the climax, and the event(s) which constitute the climax.

The specific givens (conditions) and the specific criteria will vary somewhat depending on the form of question used.

What about the other sections of the original test? Section 2 deals with characterization-

tion. As it exists each of the multiple-choice questions requires the student to recognize

some aspect of the definition or purpose of characterization. The following literal objective is suggested:

(E) The student will recognize statements which define characterization and the techniques which authors use to create character.

But you and I both know that what we really want is some comprehension of characterization..It is not enough for the student to merely recognize the definition.

Perhaps the following objective is better:

(F) The student will recognize an author's use of characterization when he sees it.

Or to be even more precise:

(G) Having read a short story which has not been discussed in class, the student will be able to identify descriptions, actions, monologues, or dialogues which are used primarily for characterization.

This last objective specifies what it is that the student will be given as part of the test experience. Consider the following alternative for Section 2 of the original test.

(4) Sample Test—The Short Story

Section 2.

Below are excerpts from the stories you were assigned to read. If the passage is used primarily for characterization circle the yes; if the passage serves some other purpose in the story, circle the no.

Yes E~

~3 no 3.

Yes E~

~ no

Yes E~1

E~ no

1. ""He looked terrible. His face, which was lean, hard brown when he wasn't drinking, was puffed and red. His eyes were bloodshot, his one popeye stuck out more than ever, and he needed a shave. But his hands shook too bad to use his straight razor and ordinarily he wouldn't use a safety razor."" (The Blue Serge Suit)

2. Grandpop rocked and glared at Father. ""you don't look so good,"" he said. ""How do you feel?"" (The Blue Serge Suit) He points a stick at me when I come up, and says: ""Ha' cursed paleface, do you dare to enter the camp of Red Chief, the terror of the plains?"" (The Ransom of Red Chief)""

I took the rock away from the boy and kind of patched up the argument. (The Ransom of Red Chief)

Red Chief was sitting on Bill's chest, with one hand twined in Bill's hair. In the other he had the sharp case knife we used for slicing bacon; and he was industriously and realistically trying to take Bill's scalp, according to the sentence that had been pronounced upon him the evening before. (The Ransom of Red Chief)

Grandpop was at home. He was sitting in the old leather rocker in the tiny living room. (The Blue Serge Suit)

When I got to the cave, I found Bill backed up against the side of it, breathing hard, and the boy threatening to smack him with a rock half as big as a coconut. (The Ransom of Red Chief)

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Content Structure and Organization

Did you notice that the original test (1) used a multiple-choice format for Section 2, but the revised version above (4) used a true/false or yes/no format? Isn't a multiple-choice format always better than true/false? True/false always measures trivial facts, doesn't it? Not in this case. Can you see that being able to recognize whether or not a passage involves characterization is better than merely recognizing the definition? Why not use an essay format? Following is an example:

(5) Unit Test—The Short Story

Section 2. Choose one of the stories you have read. Select those passages which are used by the author to develop character.

Actually this is not a bad test if the students do what they are asked. However, this

format is likely to fail to provide an adequate test of comprehending character development. Many students will select the story you discussed in class and will provide the same passage which you used to illustrate characterization. This reduces the test to memory of a specific illustration. Even if you tell students to choose a new story some will still use the examples given in class. Even if they don't, some will choose examples from the new story which are very similar to those used in class. That is, if the example you provided described physical features, the example chosen will describe physical features; if the example you presented involves dialogue, the examples cited by many students will involve dialogue, etc. If, on the other hand, you select the passages and have students classify them, as in sample test (4) above, you can choose passages which involve techniques which you did not illustrate. This gives you a better idea as to whether or not the students are transferring the idea of characterization to all of the appropriate techniques used or whether their understanding is limited to those techniques which you illustrated in the instruction. In a classification situation providing examples for the students to identify usually provides a more adequate test than asking the students to find their own specific examples. The objective inferred by Section 3 of the original test may not be so obvious. Part of the reason is that the material given is more of a learning exercise than it is a test. The instructor is trying to help the student see how the tone or mood of the story is established. While the questions in Section 3 may help a student experience the tone of the story "The Underground Episode," it does not test the student's ability to recognize how the author established that tone. Perhaps the following objective is what the instructor is after:

(H) Having read a short story, which has not been discussed in class, the student will be able to identify the predominant element of the story (i.e., setting, plot, characterization) used by the author to establish tone or mood.

If objective (H) does represent the intent of the instructor, perhaps the following is an improvement as a means of assessing the student's understanding of how an author develops tone or mood:

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(6) Sample Test—The Short Story

Section 3. For each of the following, circle the letter that represents the best alternative.

The predominant element used by Edmund Ware in "An Underground" Episode is:

- a. setting
- b. characterization
- c.
- d.

plot

all of the above

Which of the following passages best illustrates the use of this element in the story?

The deep-trench men were admirable monsters. They knew the clay, the feel and pattern of it, for it had long been heavy in their minds and muscles. They were big in three dimensions and their eyes were black and barbarous ...

b. "Someone's got to go through the pipe," he said, raising his voice. "There's fifty bucks for the man that'll go through the pipe into the manhole with a line tied to his foot. Fifty bucks."

There is no darkness like the darkness underground that miners know. It borrows something from night, from tombs, from places used by bats. Such fluid black can terrify a flame, and suffocate, and drench a mind with madness. There is a fierce desire to struggle, to beat one's hands against the prison.

In this chapter we have tried to show that it is possible to take a memory-level test and transform it into a test that more adequately measures understanding. It is possible that we have conveyed the notion that some test item types involve memory while others do not. There are many teachers who believe that essay questions always require thinking, and hence understanding, while multiple-choice or true/false tests always require memory. It is hoped that the variety of item types illustrated may have helped you to see that this is not necessarily the case. But in case the point has not been adequately made, let us be explicit. Item Type (i.e., true/false, multiple-choice, essay, etc.) Does Not Necessarily Determine Test Adequacy.

The following examples might illustrate the point. In the first set the same memory level objective is tested using a variety of item types:

(7) Sample Test—The Short Story

True/False

Characterization is the technique of creating mood by describing the characteristics of the persons in the story.

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Content Structure and Organization

Multiple-choice

Which is the best description of characterization?

- a. the technique used by an author to develop personalities of people in the narrative.
- b. the technique of creating mood by describing the characteristics of the persons in the story.
- c. the process of describing the location and background of the story to give it character.
- d. all of the above.

Short Answer

The technique used by an author to develop the personalities of the people in a narrative is called

Essay

Define characterization and how it is developed by an author.

The essay question in the above set requires no more understanding than does the true/false question. While more memory is required to remember and write a definition than is required to recognize a correct definition when it is given, the degree of understanding required is the same.

The following set of items is again concerned with characterization but this set requires understanding rather than merely memory. Again we have used true/false, multiple-choice, short answer, and essay formats.

(8) Sample Test—The Short Story

True/False

Indicate by circling 'Yes' if the following passage is used for characterization.

Circle 'No' if it is used for some other purpose.

Yes No Grandpop rocked and glared at Father. "“You don' t look so good,““
he“

said. ""How do you feel?""

Multiple-choice

Indicate by circling the letter opposite the passage which is the best example of characterization.

- a. Grandpop rocked and glared at Father. ""You don't look so good,"" he said. ""How do you feel?""
- b. He looked terrible. His face, which was lean, hard brown when he wasn't drinking, was puffed and red ...
- c. Grandpop was at home. He was sitting in the old leather rocker in the tiny living room ...

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Short Answer

For each of the following passages, indicate by writing the name in the space to the left what story element is represented.

The deep-trench men were admirable monsters. They knew the clay, the feel and pattern of it, for it had long been heavy in their minds and muscles. They were big in three dimensions and their eyes were black and barbarous ...

There is no darkness like the darkness underground that miners know. It borrows something from night, from tombs, from places used by bats. Such fluid black can terrify a flame, and suffocate, and drench a mind with madness. There is a fierce desire to struggle, to beat one's hands against the prison.

Essay

Choose one of the stories you have read which we did not discuss in class. Select those passages which are used by the author to develop character.

The true/false and multiple-choice questions above require at least as much understanding as does the essay question. In fact, the essay question may not be as

adequate in that there is more room for misunderstanding on the part of the student and he is more likely to choose examples which resemble those used in instruction, thus reducing his performance to little more than memory.

The form of a test item is determined more by convenience and objectivity than by the level of behavior required. Well written true/false and multiple-choice questions can often require as much understanding as can essay questions. If you have a large class the convenience of the more objectively scored items should be obvious. To always

use essay questions on the assumption that they require understanding rather than memory is not justified.

Summary

The purpose of this chapter has been to present a reference example. We selected a typical test that primarily required memory. Working backward we stated some objectives which the test seemed to infer. We then suggested that these were probably not the real objectives intended by the instructor. Alternative test items which seemed to more adequately measure understanding rather than memory were suggested and discussed. While not always stated explicitly in the text, the following generalizations were suggested:

1. The performance most frequently required of students is to remember, while our intent is most often to have them understand.
2. Test performance is shifted from memory to understanding when items that require a student to remember or recognize a definition are replaced by items that require the student to use the definition to identify specific instances of the phenomena being defined.
3. Essay questions do not automatically assess understanding and are often less adequate than a true/false, multiple-choice, or short answer format.