



Thinking About Write-to-Learn Assignments

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Bloom's Taxonomy

Before making any assignment, we should be aware of our own purpose in making it. Because we have a range of instructional objectives available to us we need to set boundaries so that we can anticipate a written response that matches our instructional objective. We need to be aware of the educational objectives possible and the cognitive task each demands. A half dozen taxonomies attempt to indicate the relationship between the writing assignments we ask our students to do and the level of thinking each involves. Bloom's taxonomy, however, is the one most commonly cited. Bloom's hierarchical structure places evaluation as the most complex learning skill and knowledge as the least complex. On graduated steps between knowledge and evaluation are comprehension, application, analysis, and synthesis. Such a structure assumes that in our teaching we will work from the lower level skills to the higher level skills, giving students practice at the various levels until they become adept at each.

Multiple writing assignments, each demanding a more advanced skill, are an ideal way to promote this cognitive growth. Bloom also provides the language (typical stem words in the right-hand column of the figure on the facing page) to help formulate questions at each level. By raising the skill level required on consecutive assignments, we can challenge and develop our students' critical thinking skills. In fact, this is the very reason supporters of short writing assignments prefer them over the one long term paper due at the end of the semester.

Look over the basic formula of Bloom's taxonomy which follows, familiarizing yourself with the six categories and the words which signal each level of learning. On the pages following the chart you will find student assignments which address these levels of learning. These assignments were designed by SSU (Salisbury State University) faculty concerned with enhancing students' cognitive development. I think you will find their questions useful in devising assignments for your own students.

| QUESTIONING CATEGORY | BLOOM'S CATEGORY | STUDENT ACTIVITY | TYPICAL WORD STEMS |
|--------------------------------|------------------|---|--|
| LOWER LEVEL | Knowledge | Remembering: Facts Terms Definitions Concepts Principles | What...? List... Name... Define Describe... |
| | Comprehension | Understanding the meaning of the material | Explain... Interpret... Summarize... Give examples... Predict... Translate... |
| | Application | Selecting a concept or skill and... | Compute... Solve... |
| ...using it to solve a problem | | Apply... Modify... Construct... | |
| HIGHER LEVEL | Analysis | Breaking material down into its parts and explaining the hierarchical relations | How does...apply? Why does...work? How does...relate to...? What distinctions can be made about...and...? |
| | Synthesis | Producing something original after having broken the material down into its component parts | How does the data support...? How would you design an experiment which investigates...? What predictions can you make based upon the data? |
| | Evaluation | Making a judgment based upon a pre-established set of criteria | What judgments can you make about...? Compare and contrast...criteria for.... |
| | | | |

Adapted from *Taxonomy of Educational Objectives: Handbook I Cognitive Domain*. New York: David McKay Co., 1956

Sample Questions Based on Bloom's Taxonomy: Example # 1

The following questions based on Edsger W. Kijkstra's article "Go To Statement Considered Harmful" (*Communications of the ACM*, March 1968. 147-48) were generated by Dean Defino in the June 1988 WAC workshop.

| Bloom's Category | Question or Exercise |
|----------------------|--|
| Knowledge | List four types of clauses mentioned in the article. What is a "textual index"? |
| Comprehension | Explain the double meaning the author attributes to the term "successive action descriptions." Explain what the author means by the statement "our intellectual powers are rather geared to master static relations." |
| Application | Design a simple payroll program that computes net pay as (hours x payrate) for those working 40 hours or less and net pay as $[40 \times \text{payrate} + ((\text{hours}-40) \times (\text{payrate} \times 1.5))]$ for those working over 40 hours. First design the program using structured control statements and NO GOTO statements, then do it with GOTO statements and no alternative, choice or repetition clauses, conditional expressions or procedures. Assume that it will compute the net pay for 10 individuals (you may use pseudocode). Trace the control of each code using your own data with some hours over 40 and some 40 or less. |
| Analysis & Knowledge | Briefly describe the author's approach to the liabilities of the GOTO statement and how they are a hindrance in testing a program. |
| Synthesis | How do the clauses and expressions given in the article which replace GOTO statements, lead to the three traditional control statements: sequence, loop, and conditional? |
| Evaluation | The author appears to be advocating something more than just the elimination of GOTO statements. What approach to programming is he advocating and does he make a valid case for that approach? |

Sample Questions Based on Bloom's Taxonomy: Example #2

Edna Quinn (WAC Workshop, spring semester 1989) designed the following assignment for Nursing 538: Nursing Theories. A quick reference to Bloom quickly reveals which level of learning is addressed by each question.

THEORY-BUILDING IN-CLASS WRITING ASSIGNMENTS AND GROUP WORK

A recent study by the Bureau of National Affairs has shown that the number one problem of women in the work place is stress. This stress has been related to three factors:

1. jobs that require high productivity and have little power
2. role conflict between role at work and home
3. sexual harassment

For each one of these factors:

1. Define the concepts.
2. Operationally define the concepts.
3. Discuss the relationship between concepts.
4. Discuss the interrelationships among the three factors and stress.
5. Derive propositions that describe or predict the relationships between the concepts.
6. Diagram the relationships between propositions (conceptual framework).
7. Give example(s) of how you might test this theory or the propositions of this theory.
8. Describe the implications of this theory for nursing.

Sample Questions Based on Bloom's Taxonomy: Example #3

Mary Nichols (WAC Workshop, June 1988) designed the following questions for a writing assignment for students in EDUC 335: Mathematics in the Secondary Schools. The questions are based on Charles Krauthammer's articles "The Joy of Math, or Fermat's Revenge" (*Time*, April 18, 1988). One can easily see which level in Bloom's taxonomy is addressed by each question.

1. Suppose that sometime in the nineteenth century Fermat's proof of his last theorem was discovered in a previously lost manuscript. What effect would that discovery have had on Fermat's fame and mathematicians' interest in his last theorem?
2. Last week you were asked to respond to the question, "Why do we study mathematics?" How do you think Krauthammer would have responded to that question?
3. Can you provide a geometrical interpretation for Fermat's last theorem?
4. Do you know of anyone who might possess a view of mathematics similar to Krauthammer's? If so, what leads you to that belief? If not, why do you suppose that Krauthammer's viewpoint is rare?

Plagiarism

Students often have a vague sense of what constitutes plagiarism. Simply rearranging words in a sentence does not make it theirs. Generally, knowledge that is common knowledge does not need to be documented; knowledge that is not, does. Borrowing words and phrases here and there from a source is still plagiarism as is passing off as one's own someone else's idea. A good rule of thumb for students to follow is when in doubt, document.

Students need to be aware that we consider plagiarism a serious offense. While the penalties for being caught vary from professor to professor, consequences do exist.

The following exercises were designed by Mona Curry, a 1987 graduate of the M.A. in Writing program, to help students better understand what constitutes plagiarism. While the content is English specific, the concepts apply to all disciplines.

Plagiarism Exercises: Sample #1

1. Read this passage from Walter Allen's *The English Novel* (New York: Dutton, 1954). p. 223.

Wuthering Heights is the most remarkable novel in English. It is perfect, and perfect in the rarest way: it is the complete bodying forth of an intensely individual apprehension of the nature of man and life. That is to say, the content is strange enough, indeed baffling enough, while the artistic expression of it is flawless.

Which of the following references to Allen's analysis constitute plagiarism, and why?

- a. The most remarkable novel in English is *Wuthering Heights*. It brings forth an individual apprehension of the nature of man and life; therefore it is perfect in the rarest way. The artistic expression is flawless, but the content is strange, indeed baffling.
- b. *Wuthering Heights* is a great English novel. It is perfect in the rarest way: it provides an individual apprehension of man's nature. The artistic expression is flawless, although the content is strange and baffling.*
- c. Walter Allen insists upon the extraordinary quality of *Wuthering Heights*. In this novel, he maintains, Emily Bronte makes an extremely personal comment on the human situation by employing an impeccable novelistic framework to present her strange and mysterious characters and plot.*

*Walter Allen *The English Novel* (New York: Dutton, 1954), p. 223.

Plagiarism Exercises: Sample #1 (Answer)

Were you able to make the observations similar to the following?

Passage (a) copies the exact wording of Allen's analysis without using quotation marks. For example, these phrases are the same in both passages:

"the most remarkable novel in English"

"individual apprehension of the nature of man and life"

"perfect in the rarest way"

"indeed baffling"

In passage (a), the writer has changed the structure of some of Allen's sentences, yet still uses Allen's exact words without presenting them as a direct quotation. This is obviously plagiarism.

Although passage (b) is footnoted, some of its phrasing is taken directly from Allen's analysis and should be in quotation marks.

Passage (c) is the only one that does not plagiarize. The writer has expressed Allen's ideas in her own words, but has footnoted her source.

Plagiarism Exercises: Sample #2

2. Analyze the ways in which passage (b) makes use of passage (a) without acknowledgment.

- a. In by far the greatest number of their works it would be true to say that the protagonist is neither the plaintive and persecuted heroine. Elmira, Rosaline, Matilda; nor the handsome and gallant hero, Theodore, Constantine, Rosalvo; nor the desperate and murderous villain Montoni, Wolfran, Condemar; nor even the darkly scowling and mysterious monk; Father Heriome, Abbot Benneditto, Theodosius de Zulvin; but rather the remote and ruined castle with its antique courts, deserted chambers, pictured windows that exclude the light, haunted galleries amid whose mouldering gloom is heard the rustle of an unseen robe, a sigh, a hurried footfall where no mortal step should tread; the ancient manor, hidden away in the heart of a pathless forest, a home of memories of days long gone before when bright eyes glanced from the casement and balcony over the rich domain, the huge girthed oaks, the avenues and farstretching vistas, the cool stream winding past the grassy lawns, but now tenanted only by a silver headed retainer and his palsied dame; the huge fortress set high upon some spar of the Apenines, dark machicolated battlements and sullen towers which grown o'er the valleys below; a lair of masterless men, through whose dim corridors prowl armed bandits. Whose halls ring with hideous revelry or anon are silent as the grave....

Montague Summers, *The Gothic Quest* (New York: Russell, 1938), pp. 191-192.

- b. The background of Walpole's story is a Gothic castle, singularly unenchanted, but capable of being invested with mysterious grandeur as later in the novels of Ann Radcliffe. The Castle has been called the true hero of the book, the hub around which all action gravitates. The remote castle, with its antique courts and ruined turrets, deserted and haunted chambers where hang age old tapestries; its grated windows that exclude the light; its dark, eerie galleries amid whose mouldering gloom is heard the rustle of an unseen robe, a sigh, a hurried footfall where no mortal step should tread; its dark machicolated and sullen towers set high upon some precipice of the Apenines frowning upon the valleys below--it is the castle itself which is the focal point of Walpole's romance.

Devendra Varma, *The Gothic Flame* (London: Arthur Barker, 1957), p. 57.

Plagiarism Exercises: Sample #2 (Answer)

Were you able to make observations similar to the following?

Varma has taken the main idea, that the castle is the true hero of the Gothic novel, and also much of the exact phrasing from Summer's passage without acknowledgment. Notice the similar wording in the following excerpts:

From Summers: "the remote and ruined castle with its antique courts, deserted chambers, pictured windows that exclude the light, haunted galleries amid whose mouldering gloom is heard the rustle of an unseen robe, a sigh, a hurried footfall where no mortal step should tread;"

From Varma: "The remote castle, with its antique courts and ruined turrets, deserted and haunted chamber where hang age old tapestries; its grated windows that exclude the light; its dark, eerie galleries amid whose mouldering gloom is heard the rustle of an unseen robe, a sigh, a hurried footfall where no mortal step should tread;"

Using either an author's main idea or his exact words without acknowledgment is plagiarism.

If you were Varma, how would you make use of Summer's main point without extensive direct quotation and without plagiarism?

Here is one student's response:

Montague Summers believes that it is not any particular character that plays the leading role in a Gothic novel, but rather the recurring setting, "the remote and ruined castle" (191-92).

This passage is an appropriate reference to Varma's work because it meets the following two criteria: proper acknowledgment of the ideas of another, and proper acknowledgment of the exact words of another.

Does your response meet these criteria? Is it documented correctly? (See the *Holt Handbook* or *The Holt Guide to Documentation* for further help with documentation.)

This exercise is a modification of Martha Nochimson's plagiarism exercises in the appendix to her article, "Writing Across the Curriculum: Two Programs." Journal of Basic Writing, Spring/ Summer (1980): pp. 32-34.

Plagiarism Exercises: Writing from Sources Rating Scale

Special thanks to Jon Hall, Rutgers University WAC Program,
for permission to use these materials.

The purpose of this scale is to provide definitions and examples of both incorrect and correct use of sources in analytical essays such as those that are often assigned in academic settings. Negative numbers reflect seriously deceptive or incorrect use of sources, while positive numbers present progressively better use of sources in developing a writer's own argument. "Avoiding plagiarism" is the beginning, not the end, of the proper—and the creative—use of sources.

- 4= Fraud: Verbatim.** Use of verbatim materials from source, in whole or in part, without quotation marks, mention of an author, or an indication that they come from a source. There is a clear intent to deceive the reader into believing that this stolen material is the writer's own work.
- 3= Fraud: Paraphrase/Summary.** Paraphrases or summarizes a source, in whole or in part, in a way that makes use of someone else's ideas or information without giving credit. This could also involve fabricating sources, or including sources that exist but that were not in fact consulted, or leaving out sources that were used. There is a clear intent to deceive the reader into believing that these stolen ideas are the writer's own work.
- 2= Inadequate Documentation: General Acknowledgments.** The writer acknowledges, in a general way, that sources were used, but specific pieces of outside material are not tied to specific sources. A paper may just have a "Bibliography" at the end, for example, with no parenthetical citations.
- 1= Inadequate Documentation: Unclear Citation.** Has apparatus for documentation, but placement of citations or format errors make it impossible to tell exactly where the source leaves off and the writer's own ideas begin. An example would be a single general parenthetical citation at the end of a long paragraph.
- 0=Correct Documentation: No Value Added.** Avoids plagiarism, but doesn't add anything of the writer's own. Usually this involves just using a quotation with proper documentation but no commentary and no integration into an ongoing argument. The selection of a particular passage reflects an idea, perhaps, but that idea has not been spelled out explicitly or developed within the paragraph.
- 1=Correct Documentation: Presents Source Only.** Mixes source ideas together with writer's own, with only occasional attempt to discriminate. The writer may present facts in a narrative or summary fashion, but does not attempt to interpret or combine them. The source's views come through without enough mediation through writer's consciousness. The source is documented, often incompletely, but the writer's own voice is lost.
- 2=Correct Documentation: Distorted Value Added.** Incomplete attempt to integrate source's ideas into writer's own argument. Often this results in a distortion of the source: the writer tries to make the source say what is convenient to the argument, regardless of what the source actually means. Comment on the source material may be irrelevant or misleading, and may reflect a misunderstanding on the writer's part. The writer's own voice is heard, but the meaning and integrity of the source material is lost.

3=Correct Documentation: Source’s and Writer’s Voices Not Synthesized. Usually makes it possible to distinguish source’s ideas from writer’s own; occasionally mentions sources by name. Writer presents source material accurately, in a way that shows that the writer understands what has been said, but does not sufficiently synthesize or evaluate the source material. We can tell which is the writer’s and which is the source’s, but we’re not quite sure how they go together. Although the source material is not distorted, there often is only an approximate relation between the writer’s argument and the source material.

4=Correct Documentation: Synthesis and Value Added. Frequently identifies source by name, and carefully separates source’s ideas from writer’s own. The reader can see the writer comparing and evaluating material from source and coming to a reasoned conclusion. The writer has added value to the source material by re-applying it in a different context, by exploring implications in it left undeveloped by the original author, by examining underlying assumptions and evaluating them, by disagreeing in whole or in part and presenting logical reasons for doing so, or by using a fair interpretation of the source’s conclusions as evidence in support of the writer’s own argument.

Exercise on Use of Sources

Directions: Evaluate each of the following passages, all based on the same excerpt from an article on Thomas Jefferson by Joseph J. Ellis. Give each passage a rating based on “Writing From Sources: Rating Scale” ranging from -4 to +4, and be prepared to explain why you assigned that number.

1. _____ Joseph J. Ellis writes: Thomas Jefferson was many things, but mostly he was a creature of paradox: the wealthy Virginia aristocrat who wrote the most famous statement of equality in American history; the sincere advocate of agrarian simplicity who worshipped the art and architecture of Paris; above all, the fervent believer in human freedom who lived his entire life as a slave owner. The last paradox has always seemed the most poignant, in part because Jefferson himself acknowledged the massive gap between his principled ideals and his personal reality, and in part because the paradox Jefferson lived was emblematic of the larger disjunction in American society—now generally regarded as the central dilemma of American history—between the promise of liberty and the fact of racial discrimination. (46)

Another biographer of Jefferson has said...

WORKS CITED

Ellis, Joseph J. “Jefferson’s Cop-out.” *Civilization* 3: (December/January, 1996-97): 46-53.

2. _____ I think that Jefferson was a hypocrite because he said he was against slavery but he owned slaves. He knew it, too, and he got away with it because his hypocrisy was the same as America’s hypocrisy, the gap between the ideals of freedom and the reality of color-based prejudice.

3. _____ Kids don't have any heroes to look up to in contemporary society, so we need to look to the past to find examples of leaders who approached perfection. We need to remember our Founding Fathers as men of unblemished good character and important accomplishments. For example, Joseph J. Ellis calls Thomas Jefferson a "fervent believer in human freedom," a "sincere advocate of agrarian simplicity," a man of "principled ideals," and the author of "the most famous statement of equality in American history" (46).

WORKS CITED

Ellis, Joseph J. "Jefferson's Cop-out." *Civilization 3*: (December/January, 1996-97): 46-53.

4. _____ Now, under the so-called "Patriot Act," it is Muslim-Americans who must live under the shadow of suspicion and fear. It is another chapter in the central dilemma of American history—between the promise of liberty and the fact of racial discrimination.
5. _____ Joseph J. Ellis argues that Jefferson inhabited throughout his life a series of contradictions between his beliefs, which were liberal and far ahead of their time, and his own behavior and position in society, which forced him into a much more conservative position (46). But Jefferson was not the only one who had to face the disjunction between a belief in freedom and the reality of being an owner of slaves. George Washington, for example, never expressed abolitionist sentiments, but he freed his slaves in his will.

WORKS CITED

Ellis, Joseph J. "Jefferson's Cop-out." *Civilization 3*: (December/January, 1996-97): 46-53.

6. _____ As Joseph J. Ellis said in 1997 in "Jefferson's Cop-out" published in *Civilization* volume 3, pages 46-53, Jefferson lived his whole life as a slave owner. He could have freed his slaves, but he didn't because he couldn't afford to keep his farm going at Monticello if he did.
7. _____ Now that DNA tests have established that Thomas Jefferson almost certainly was the father of at least one child by his slave Sally Hemmings, we can add yet another layer to the paradox Jefferson lived. He was an aristocrat who believed in equality, a slaveowner who advocated abolition, a man who loved the simple rural life but was also a sophisticated connoisseur of European architecture. Now we find out that he was also a man who denounced black women as inherently unattractive in his *Notes on the State of Virginia*, yet he was sleeping with one himself.

WORKS CITED

Ellis, Joseph J. "Jefferson's Cop-out." *Civilization 3*: (December/January, 1996-97): p. 46.
 Jefferson, Thomas. *Notes on the State of Virginia*.

8. _____ If we look at history more closely, it becomes harder and harder to find anybody who is an unblemished hero. One famous American, Thomas Jefferson, was many things, but mostly he was a creature of paradox: a wealthy Virginian who wrote a famous statement of equality, a sincere advocate of simplicity who worshiped the art and architecture of Paris; above all, a strong believer in human freedom who lived his entire life as a slave owner. Jefferson himself acknowledged the massive gap between his principled ideals and his personal reality. We may not like to think so, but our whole American society is caught in that same central dilemma: between the promise of liberty and the fact of racial discrimination.
9. _____ If Jefferson was, as Joseph J. Ellis has argued, “a creature of paradox” (46), it was not because of his personal flaws so much as because of the times in which he lived. We should remember that a “paradox” is not just a “contradiction.” If you just contradict yourself, then you should find a way to be more consistent; if you inhabit a paradox, then you’re in a no-win situation and you have to muddle through as best you can. It’s easy for us to throw stones at Jefferson for not freeing his slaves, despite his announced opposition to the institution of slavery. But we have to ask ourselves: where would those slaves have gone, in the late 18th or early 19th century? How would they have lived, in a society in which there were very few opportunities for “free blacks” to make a living in a world that was prejudiced against them? Would it have been more moral of Jefferson to follow his abstract beliefs, if it meant that he was not so much offering his slaves the promise of freedom but rather condemning them to poverty and privation?

WORKS CITED

Ellis, Joseph J. “Jefferson’s Cop-out.” *Civilization* 3: (December/January, 1996-97): 46-53.

10. _____ Although Thomas Jefferson believed in freedom, he couldn’t quite bring himself to free his slaves. Although he believed in living a simple rural life, he spent years living a cosmopolitan life in Paris, and served two terms in the White House at the center of American power. Although he believed in equality, he considered himself an aristocrat. All of these things make this central figure of American history more complex, and it shows the ways in which American history as a whole is hard to get a grasp on, because it, too, is riddled with paradoxes. We live in a country of freedom and oppression, of ideals and cynicism, of opportunity and hopelessness. Which America you live in depends on who you are. Jefferson is particularly interesting because he managed to have one foot in two of these Americas at the same time, and it almost tore him apart. Whether the problems of post-9/11 America will now tear this society apart remains an open question, but an examination of Jefferson can help to point us to an answer (Ellis 46).

WORKS CITED

Ellis, Joseph J. “Jefferson’s Cop-out.” *Civilization* 3: (December/January, 1996-97): 46-53.

11. _____ Joseph Ellis sees Thomas Jefferson as a “creature of paradox.” He portrays Jefferson as a rich man who believed in democracy, and as a gentleman farmer who truly enjoyed the rural life, and yet was also comfortable with sophisticated European art. And most problematic of all, according to Ellis, was the contradiction between his commitment to liberty and his status as a life-long owner of slaves himself. Ellis argues that Jefferson’s story is a symbol of a larger “disjunction” in American history, which is also full of paradoxes “between the promise of liberty and the fact of racial discrimination” (46).

WORKS CITED

Ellis, Joseph J. “Jefferson’s Cop-out.” *Civilization* 3: (December/January, 1996-97): 46-53.

12. _____ Joseph J. Ellis portrays Thomas Jefferson as a man who embodied, in his life and in his beliefs, “the central dilemma of American history” (46). For Ellis, the “most poignant” aspect of Jefferson as a “creature of paradox” (46) was that he believed deeply in freedom, yet he couldn’t quite bring himself to free his slaves. Ellis calls attention to other important tensions as well: although Jefferson believed in living a simple rural life, he spent years living a cosmopolitan life in Paris, and served two terms in the White House at the center of American power; although he believed in equality, he considered himself an aristocrat. Ellis’s portrait makes this central figure in American history more complex, and he suggests that American history as a whole is hard to get a grasp on, because it, too, is riddled with paradoxes. Ellis’s argument about American historical paradoxes is even more valid today than it was in Jefferson’s time. We live in a country of freedom and oppression, of ideals and cynicism, of opportunity and hopelessness. Which America you live in depends on who you are. Jefferson is particularly interesting because, as Ellis demonstrates, he managed to have one foot in two of these Americas at the same time, and it almost tore him apart. Whether the problems of post-9/11 America will now tear this society apart remains an open question, but an examination of Jefferson can help to point us to an answer.

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