



*a podcast about
how we learn,
how we teach,
and how they overlap*

Episode 41 - How To Write Effective Written Questions

Adam: Hi, I'm Adam Sanford. I'm an academic life coach and professor in Los Angeles.

Dinur: And I'm Dinur Blum. I'm a college professor in Los Angeles.

And this is Learning Made Easier, a podcast where we discuss how we learn, how we teach and how they overlap.

Adam: Welcome back to Learning Made Easier. This is Episode 41: How To Write Effective Written Questions.

Now this is the third episode in our Testing Series for teachers and for students - everything you wanted to know about creating, writing and taking tests. In this episode, Dinur and I are going to talk about written questions: essays, short answers and fill-in-the-blank. And this is mainly aimed at teachers - how to write these questions for the test you're creating.

Dinur: Now, for fill-in-the-blank tests. These sorts of questions are really useful for checking memorization. If knowing specific phrases or terms is really important, then fill-in-the-blank items can be useful.

That said, it's difficult to measure deeper learning or higher-order learning skills, if you remember back to Bloom's Taxonomy, with these kinds of questions. Fill-in-the-blank questions also require more subjective grading, because the teacher has to judge if "apples" and "apple," or "apple" and "pear," are close enough to both be the right answer or not.

Adam: Now there are some stylistic issues for how to create fill-in-the-blank questions that work.

So first, keep the blanks near the end of the statement, because that's going to be less confusing for the student. They'll have the context of the statement before they need to provide an answer.

And another thing is, keep the blanks of equal length, so five underscores, or 10, or whatever - but make them the same length, so that the student can't try to guess the answer just based on the length of the blank. You might have a whole phrase that goes in there, but only five underscores, so the student has to think about what actually goes in the blank. Not "Okay, long blank, it's going to be a phrase; short blank, it's going to be a word." You want to avoid that, if you can.

Dinur: Some other things to keep in mind with these questions: One is that you want to make sure that the statement will be grammatically correct when the student fills in the blank. So, a really bad example of this would be going back to our nursery rhymes: "At the end of "The Farmer in the Dell," the _____ stand alone."

The correct answer would be "cheese," but the verb then needs to be "stands," not "stand." Right now, it implies a plural noun, which would be confusing to students.

Adam: And speaking of grammar, make sure that the grammar doesn't give away the answer. So here's a bad example. "After nearly a thousand experiments, Edison produced a _____."

Well, okay. That kind of tells you it's going to be something that doesn't start with a vowel, because it's "a" something-or-other.

But a good example would be "After nearly a thousand experiments, Edison produced a(n) _____" - with the n in parentheses, so that it could be either "a" or "an," and it's not giving away whether the word that goes in the blank starts with a consonant or a vowel. The student now has to think a little harder.

Dinur: Make sure that there was only one correct answer that fits in the blank. More than one correct answer is both stressful and unfair to the student.

Adam: And that would also screw up any grading for fill-in-the-blanks on, say, a learning management system, because it's going to insist on specific words. Well, if there's three correct answers to that, then either you need to let your students know that the only answer you're going to accept is "motorcycle," or you have to accept that "moped" and "motorbike" might also be answers that fit in the blank, and make sure you account for that.

Another thing, make sure that the words that would fit in the blank (or the blanks) are the important words, the ones that test knowledge. So a bad example would be "A complete sentence _____ at least a noun and a verb."

A good example would be "A complete _____ contains at least a noun and a verb."

What we're looking for here is, "What's a complete sentence?" If you use the word "sentence" in there, and then you have _____ - is it "contains?" Is it "has?" Is it "includes?" It could be a bunch of different things that go in that bad example. But the good example, "A complete _____ contains at least a noun and a verb" - pretty obvious. The answer has to be "sentence."

Dinur: Make sure the statements do not leave out important context. So a really bad question would be "_____ is a _____ made from _____," which really sounds like I'm self-censoring, but that should show you that that is a terrible question to ask on a test. A good example would be "Denim is a cloth made from _____." The answer? "Cotton."

Adam: Another thing is to keep clues out of the statement. So a bad example would be "The _____ of Independence began the Revolutionary War." A good example would be "Which document is considered the start of the American Revolution? _____" so that they provide the answer.

It doesn't necessarily have to be something that goes in a sentence, and this is a mistake that I see a lot of people making with fill-in-the-blanks. They think "I've got to put a blank somewhere in a statement or a sentence." No, you don't. You can ask a question, and then give a blank where they put the answer in.

Dinur: Now that was fill-in-the-blanks. Now we move on to written answers or written questions, short answers and essays. And the goal of written questions is to see how well a student can apply, synthesize and evaluate the information they've learned. Effectively, "how well can they work with this?" And these sorts of questions go into the upper levels of Bloom's Taxonomy.

Of course, a student would have to perform some memorization and comprehension and also some application in order to do these questions well.

Adam: So, written questions then can be used for any level of the Taxonomy. Now the verbs used to start the question will often indicate which level are we testing. And many charts of Bloom's Taxonomy verbs or stems exist online. Kansas State, however, identifies these as some really effective stems or starting verbs for most written questions.

Dinur: So if you want to test knowledge, knowledge questions have stems like "What is...?" "Who did...?" "Where is...?"

Adam: Now comprehension questions, the next level up, they will have stems like "Define in your own words..." or "Define and give an example of..." or "Convert this into..." or "List three reasons for..." or just "Describe..."

Dinur: Now for moving up the taxonomy, application questions have stems like "How is _____ an example of _____?", "How is _____ related to _____?", "Why is _____ significant?"

Adam: And then, one step up from that, the analysis questions are going to have stems like "What are the parts of...?" or "Classify this according to that," or "Outline this," or "Diagram that," or "Compare and contrast this and that."

Dinur: Now we've reached the penultimate level. Synthesis questions have stems like "What can we infer from...?" "What ideas can we add to....?" "How would we create a or an....?"

Adam: And then, finally, at the top of the taxonomy, evaluation questions are going to have stems like "Do you agree with...?" or "How would you decide about...?" or "What priorities would you give to...?"

Dinur: Avoid the word "discuss" in written question prompts, because that word is really too vague and it doesn't give students the guidelines they need to form a valid answer. Is the discussion one sentence? Is it a paragraph? Is it two pages? You want to be clear when you're testing students, and just giving a word like "discuss," without any extra guidelines, kind of keeps students in the dark.

Adam: And the other thing about "discuss" is that if you are looking to test knowledge, it's too easy for a student to see the word "discuss" and think, "Oh, they want my opinion!" And that isn't what you want, because if they're just talking about their opinion of this thing or their opinion of the other thing, it's not actually answering the question.

But they're going to get frustrated if all you give them is "discuss." That's a really vague word. It's a really nebulous word. It could mean dozens of different things, depending on what you want them to discuss.

Now, if you say something like, “Discuss the difference between this and this,” okay, but you could just as easily say, “Compare and contrast this and this.” That’s more clear. It gives a better idea of what’s expected.

Now, I will also say this, a lot of students coming into college today do not understand these stems. I had a student who said, “I don’t know what you mean when you say ‘compare and contrast.’”

So I actually produced a little list of “when it says this, this is what I want you to do; when it says that, that’s what I want you to do;” and if I can find that, I’ll put it in the show notes, because I think it’s important that students understand what the question means when we ask it. And that word “discuss” - that bit me so many times before I realized, “Oh, duh, ‘discuss’ is a really vague word!”

Now one other thing about test construction - try to keep long essay questions to three at most, if the test is all essay, and try to keep it to only one essay question if there are any other questions on the test. Because you have to think about how long it takes students to do that kind of question, and you’ve got to allow them enough time to do, say, the multiple-choicers and true/false questions you gave them at the beginning of the test, as well as the essay that you’re putting at the end of the test. Because if they only end up with seven minutes to do an essay that you expect to be three pages of a bluebook, and you’ve given them 45 or 50 multiple-choice questions first, they’re going to be under a time crunch unless you can give them, like, two hours to take a test.

Dinur: So that’s what we have for you in Episode 41. If you’re finding this podcast helpful, please share it with your friends! We’re always hoping to get new subscribers, so we can help more people. You can find us on Apple Podcasts, Spotify, and Android. We’re hosted on Blubrry.com. Also, we’d appreciate it if you wrote a review of this podcast on Apple Podcasts.

Adam: Be sure to join us next week for Episode 42, when we’ll talk about how to create rubrics to make grading and studying easier.

Dinur: You’ve been listening to Learning Made Easier, a podcast about how we learn, how we teach, and how they overlap.

Adam: We want to say thank you to all of our supporters on Patreon, who make this podcast possible.

Dinur: If you want to support us, please go to www.patreon.com/learningmadeeasier.

Adam: We look forward to seeing you next week!