



INSTRUCTOR'S GUIDE



Teaching Technique 34

Invent the Quiz

ACTIVITY TYPE

- Active/Engaged Learning
- Problem Solving

TEACHING PROBLEM ADDRESSED


- Cheating
- Surface Learning

LEARNING TAXONOMIC LEVEL

- Application: Analysis & Critical Thinking
- Foundational Knowledge
- Learning How to Learn
- Caring

Invent the Quiz

In *Invent the Quiz*, students write a limited number of test questions related to a recent learning module and then create an answer sheet, or alternately a model answer and scoring sheet, to accompany the test questions.

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- 1 Clarify your teaching purpose and learning goals for *Invent the Quiz*
 - 2 Identify the learning task's underlying problem and craft the prompt
 - 3 Set assignment parameters for completing the prompts
 - 4 Develop a plan for learning assessment or grading
 - 5 Communicate assignment instructions to students
 - 6 Implement the technique
 - 7 Reflect upon the activity and evaluate its effectiveness

Step-By-Step Instructions

In this section we provide you with guidance on each of the seven steps involved as you consider this technique.

STEP 1: CLARIFY YOUR TEACHING PURPOSE AND LEARNING GOALS

Invent the Quiz has students design their own practice quizzes. This is a flexible technique that can be used across many different disciplines and fields. It could be used in conjunction with a reading assignment, video, lecture, or other content-based activity. It could also be used before a brief quiz or before a larger examination as a review.

The technique provides students with a structured opportunity to gain practice on anticipating and preparing for tests. The process of creating the questions encourages them to think about what is the most important content to be learned. Through creating questions and answers, students think about the content at a deeper level. This technique is a form of review, which encourages students to review and thus learn the content more deeply.

Invent the Quiz is also useful as a learning assessment technique because it allows faculty to determine whether students have been able to understand and summarize important content. It also allows instructors to see what students think are the most important concepts in the learning module. It also provides teachers with an opportunity to see whether students have misunderstood any information. Finally, it provides teachers with information about students' expectations for an upcoming quiz.

STEP 2: IDENTIFY THE LEARNING TASK'S UNDERLYING PROBLEM AND PROMPT

Determine the unit of content students will cover and determine how you will ask students to invent a quiz that covers this body of work.

STEP 3: SET ASSIGNMENT PARAMETERS

- Determine what format the quiz should take:
 - › Multiple choice.
 - › Fill in the blank.
 - › Essay.
 - › Other.
- Determine how many questions students should develop.
- Determine also whether you will ask them to create a separate answer sheet.

Step-By-Step Instructions (CON'T)

STEP 4: DEVELOP A PLAN FOR LEARNING ASSESSMENT OR GRADING

This technique can be used as a formative assessment for the intent of helping students improve their knowledge prior to a summative assessment. If you want to grade it, consider a participation/engagement grade.

STEP 5: COMMUNICATE ASSIGNMENT PARAMETERS TO STUDENTS

Tell students about the activity and describe the assignment parameters. Provide students with advice on how to write good questions.

STEP 6: IMPLEMENT THE TECHNIQUE

- **Before the Activity:**
 - › Determine what type of question students should write, such as multiple choice, fill in the blank, short answer, or short essay.
 - › Set the length of the quiz students will create.
 - › Create a few questions yourself as models and share them with the class as examples.
- **During the Activity:**
 - › Explain the purpose of the activity. Allow time for questions.
 - › Provide students with time to write the questions and answer sheets.
 - › Collect their test questions and answers.
- **After the Activity:**
 - › Use a checklist to score each test and answer sheet. Also note anything outstanding or unusual about the questions or the answer sheets.
 - › Review the topics of the students' questions. Did they include all of the important topics? Are some important topics underrepresented? Are some overrepresented? Examine the check-sheets and average scores.
 - › Look for patterns in the data (for example, a pattern of students writing questions that are too easy).

STEP 7: REFLECT UPON THE ACTIVITY AND EVALUATE ITS EFFECTIVENESS

When reflecting on the activity and how effective it was, consider the following questions:

- Did the technique match the course learning goals and objectives?
- Did it meet my goals for this learning module?
- Was it appropriate for the students?
- Did the technique keep the students engaged?
- Did it promote student learning?
- Did it provide me with information about student understanding?

If you answer yes to all or most of these questions, next consider how you might improve the activity for the next use.

Support Materials

The materials in this section are intended to help you with the process of implementing this technique.

SAMPLE SCORING RUBRICS

Consider the following sample rubrics to help you assess and score *Invent the Quiz* in your class.

| QUESTION SCORING RUBRIC | | | |
|-------------------------|-----------|------------|-----------|
| QUESTION | RELEVANCE | DIFFICULTY | CLARITY |
| 1 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 |
| 2 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 |
| 3 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 |
| 4 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 |

| ANSWER SCORING RUBRIC | | | |
|-----------------------|-----------|-------------|--------------|
| ANSWER | ACCURACY | ORIGINALITY | THOROUGHNESS |
| 1 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 |
| 2 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 |
| 3 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 |
| 4 | 4 3 2 1 0 | 4 3 2 1 0 | 4 3 2 1 0 |

Support Materials (CON'T)

VARIATIONS AND EXTENSIONS

- Ask students to work in groups to create their tests and answer sheets. This approach generates a group product rather than an individual one.
- Put students into groups and then have them quiz each other.
- Consider including some of the quiz questions on your next quiz or examination or alternately in your Team Tests (LAT 9) or Team Games Tournament (LAT 10).

Online Adaptation

This section is intended to help you with the process of implementing and assessing *Invent the Quiz* in your online class.

HOW TO START

- Determine the type and number of questions students will write.
- Create an assignment in your Learning Management System and include directions and tips for writing effective test questions.
- An internet search for “writing good test questions” provides ample resources you can use.
- Include your own model questions and answers so students clearly understand the task.
- Have students develop and submit their own quizzes.

IN DISCUSSION FORUM

You can also implement an extension of this technique in a discussion forum. Ask each student to choose their favorite question from their own quiz and post it in the discussion forum. This allows all students to see a variety of potential questions.

Technique Template

Following are two templates to assist you as you think through how you might implement this technique in your own class. The first is a completed template, providing an example of how a Professor adapted *Invent the Quiz* in their course, *Introduction to Marketing*. The second is a blank template for you to fill out to tailor this technique for your course.

Technique Template

Sample *Invent the Quiz* Completed Technique Template:

Content from *Learning Assessment Techniques: A Handbook for College Faculty*

Introduction to Marketing

Course Name

COURSE CHARACTERISTICS

What are the situational factors that impact this course? For example, is it on campus or online? How many students? Is it lower division or graduate? Are there student attributes such as attitudes, prior knowledge, reasons for enrolling, and so forth that should be taken into account as you consider this technique?

A marketing professor of an introductory business/marketing class teaches at a community college and regularly has between 30 and 40 students per section.

STEP 1: CLARIFY YOUR TEACHING PURPOSE AND LEARNING GOALS

Why are you choosing this technique? What do you hope to accomplish?

*This marketing professor identified the following goals and objectives in her syllabus. She decided to use *Invent the Quiz* prior to a test to help students learn the material more deeply as well as to help their test performance.*

STEP 2: IDENTIFY THE LEARNING TASK'S UNDERLYING PROBLEM AND PROMPT

What is the question you want learners to address, or problem you want them to solve?

The Professor decided to use Invent the Quiz to help students learn the material related to the supply and demand course goals more deeply.

STEP 3: SET ASSIGNMENT PARAMETERS

What are the assignment logistics? For example, will this be assigned individually or is it group work? How long will the assignment take? Will students be submitting a product? What materials, resources, or additional information do you anticipate needing?

The Professor determined that she would ask students to develop five short answer questions and to create the answer sheets as a homework assignment. They would turn in their quizzes and answer sheets at the next class session.

STEP 4: DEVELOP A PLAN FOR LEARNING ASSESSMENT OR GRADING

If you decide to assess learning, how will you determine that learning has occurred? For example, will you use a simple +/check/- grading system? If you use a rubric, will you use an existing one or create one? What will be your criteria and standards?

The Professor created a rubric she would use for assessing the quiz question for relevance, difficulty, and clarity. She also developed a second rubric for the answers assessing their accuracy, originality, and thoroughness.

STEP 5: COMMUNICATE ASSIGNMENT PARAMETERS TO STUDENTS

How will you communicate assignment parameters to students? For example, through a handout? A prompt on a presentation slide? Assignment instructions in your online course?

The Professor announced the activity and shared a handout with the assignment parameters. The handout also provided guidance on writing short answer questions.

STEP 6: IMPLEMENT THE TECHNIQUE

How will you adapt steps/procedures for your students? Are there any additional logistical aspects to consider?

To implement the activity, I announce it in class and tell students how to access the document in the LMS. I ask them to complete the work and post it as an assignment prior to the next class. In class, we compare answers and talk about any differences.

STEP 7: REFLECT UPON THE ACTIVITY AND EVALUATE ITS EFFECTIVENESS

Note: This step will be completed after you have implemented the technique.

Did this technique help you accomplish your goals? What worked well? What could have been improved? What might you change if you decide to implement the activity again?

After scoring each quiz and answer sheet, she then averaged the scores of all of the questions from the students' quizzes and answers sheets to get a composite score. She created tables so that she could more clearly see the patterns. She felt like the activity provided good information about their understanding.

Technique Template

This template is intended for use when planning to implement ***Invent the Quiz*** in your class. Fill in the blanks below, and use the information provided elsewhere in the Instructor's Guide to assist you in your thinking.

Course Name

COURSE CHARACTERISTICS

What are the situational factors that impact this course? For example, is it on campus or online? How many students? Is it lower division or graduate? Are there student attributes such as attitudes, prior knowledge, reasons for enrolling, and so forth that should be taken into account as you consider this technique?



STEP 1: CLARIFY YOUR TEACHING PURPOSE AND LEARNING GOALS

Why are you choosing this technique? What do you hope to accomplish?



STEP 2: IDENTIFY THE LEARNING TASK'S UNDERLYING PROBLEM AND PROMPT

What is the question you want learners to address, or problem you want them to solve?



STEP 3: SET ASSIGNMENT PARAMETERS

What are the assignment logistics? For example, will this be assigned individually or is it group work? How long will the assignment take? Will students be submitting a product? What materials, resources, or additional information do you anticipate needing?



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Note: This step will be completed after you have implemented the technique.

Did this technique help you accomplish your goals? What worked well? What could have been improved? What might you change if you decide to implement the activity again?

References and Resources

PRIMARY SOURCE

Content for this download was drawn primarily from “Learning Assessment Technique 46: Invent the Quiz” in *Learning Assessment Techniques: A Handbook for College Faculty* (Barkley & Major, 2016), pp. 376–381. It includes material that was adapted or reproduced with permission. For further information about this technique, including examples in both on campus and online courses, see the primary source:

Barkley, E. F., Major, C. H. (2016). *Learning Assessment Techniques: A Handbook for College Faculty*. San Francisco, CA: Jossey-Bass.

CITATIONS AND ADDITIONAL SUGGESTIONS FOR FURTHER READING

- Angelo, t. A., & Cross, K. P. (1993). Cat 25: Student generated test questions. *In Classroom assessment techniques: A handbook for college teachers* (2nd ed., pp. 240–243). San Francisco, CA: Jossey-Bass.
- Finley, T. (2014). Dipsticks: Efficient ways to check for understanding. *Edutopia: What Works in Education*, 72(5), 1–9.

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