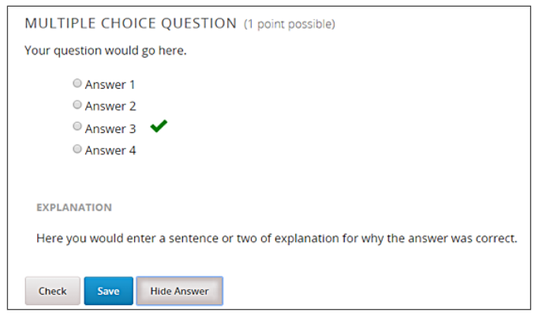
DESIGNING ASSESSMENTS FOR LEARNING ONLINE - EDX TYPES

Use this document to identify the assessment types you can use on the edX platform. Then begin to formulate assessments towards measuring the different types of learning identified as part of Bloom's Taxonomy. As you begin to write assessments, reference "Designing Assessments for Learning Online - Writing, Parts 1 and 2".

The assessments you design should always have a direct connection to the learning objectives so as to ensure measurement of instructional effectiveness. Additionally, it is good practice to continually reflect upon and hone written questions to better measure learning.

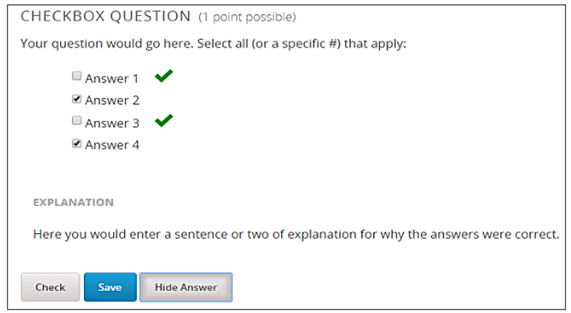
Multiple Choice Problem

These present a stem with a series of possible solutions. Of the solutions, learners select one option. Options for answering are always present to the learner and can be programed to show a random set of choices.



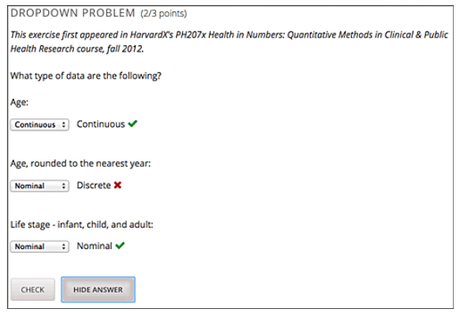
Checkbox Problem

These present a stem with a series of possible solutions. Of the solutions, learners select multiple options and must select all correct answers in their response. Partial credit cannot be earned in this question type.



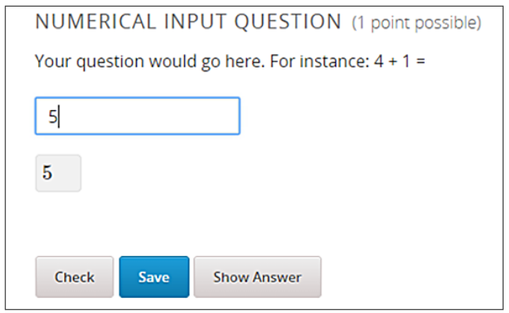
Dropdown Problem

These allow learners to select from a collection of solution options from a dropdown menu. These can be used to complete sentences or answer a series of short questions.



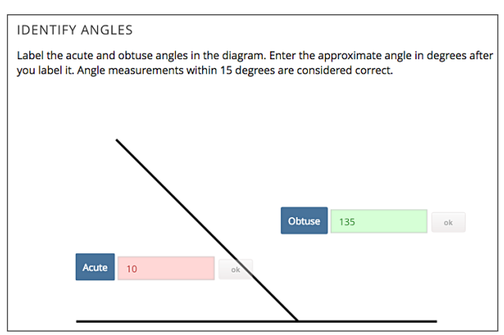
Text or Numerical Input

These direct learners to enter text or numbers into a form field. This can also include relatively simple mathematical expressions. To get these correct, all input must entered exactly as instructed.



Drag and Drop Problems

These present a background image with one or more items that can be dragged into target zones. These problems can be combined with text or numerical entry. When text and numerical entry is required partial credit can be earned.



** Hints / Explanations **

Adaptive Hints:

For text, numerical, and multiple choice problems, these can be used to provide feedback that is likely to help the learner give the correct response.

Explanations:

For all problems, explanations can be provided after learners have saved their responses. These are helpful in providing feedback on why a questions response is incorrect.

ASSESSMENT GUIDELINES IN COURSE CREATION:

Below is a summarized list of guidelines to follow when creating assessments in an online course. Generally assessments should not be used as a method for instruction, however if your assessment model involves increasingly difficult content with formative and summative assessments, then formative questions can be designed to enhance instruction. Additionally, you should always write your questions clearly and succinctly, and consider places to include explanations and hints. Finally, always keep in mind that the use of different question types helps in terms of cognitive processing, active learning, and motivation.

Question Stem/Problem:

- Present a clear problem.
- Contain only relevant material.
- Avoid negatively stated.
- Ask as a question or partial sentence.

Question Solutions/Alternatives:

- State clearly and concisely.
- Present plausible solutions.
- Mutually exclusive.
- Homogenous in content.
- Present without clues to correct response.
- No "All of the Above" or "None of the Above".
- Present in logical order.
- Maximum of 5 options.

Refer to: "Designing Assessments for Learning Online - Writing, Parts 1 and 2"

DESIGNING ASSESSMENTS FOR LEARNING ONLINE - WRITING, PART 1

Use this document to begin designing effective assessments for multiple choice and checkbox questions. The strength of these kinds of questions is in their versatility. For instance, you can effectively measure learning outcomes for remembering, comprehending, applying, analyzing, and evaluating. Where they fall short however, is in measuring learners' abilities to organize thoughts and express creative ideas.

Recall that the assessments you design should always have a direct connection to the learning objectives so as to ensure measurement of instructional effectiveness. Additionally, through the process of designing a course, it is a good idea to continuously reflect upon and hone assessments.

Recall Assessment Variations on edX: Multiple Choice Problem | Checkbox Problem | Dropdown Problem | Text or Numerical Input | Drag and Drop Problems

ANATOMY OF AN ASSESSMENT:

A multiple choice assessment consists of two parts: (1) a problem or stem, and an (2) alternative or solution. Of the alternatives, there is one correct or best alternative that is the answer, and there are multiple incorrect or inferior alternatives that are the distractors.

Milana Economist is creating an online course and wants to ensure that her instruction is effective. What is the first thing that she should define in her course design process? — **Stem/Problem**

- Distractor A. Assessments
- Distractor B. Content
- Answer C. Learning Objectives
- Distractor D. Outline
- Distractor E. Practice

Solutions/Alternatives

DESIGNING AN EFFECTIVE STEM/PROBLEM:

Present a clear problem.

The stem should present a clear and definite problem. This is to allow the learner to understand the problem with ease, as well as to allow focus on the learning objective the assessment aims to measure.

✖ **Which of the following is a true statement?**

A. Changes in prices of goods is the underlying reason for increasing opportunity cost.
B. Scarce resources is the underlying reason for increasing opportunity cost.
C. Resources not being equally suited for the production of all goods is the underlying reason for increasing opportunity cost.
D. Inability to divide goods into smaller units is the underlying reason for increasing opportunity cost.

✔ **Which of the following can explain the existence of increasing opportunity cost?**

A. Changes in prices of goods.
B. Scarce resources.
C. Resources not being equally suited for the production of all goods.
D. Indivisibility of goods in smaller units.

Avoid negative statements.

Educational research has shown that negatively stated items are harder for learners to process. If an assessment must be negatively stated, such as dangerous items or poor practices, then emphasize the negative aspect with capitalization.

✖ **Which of the following will not shift the demand curve?**

A. Change in price of the good
B. Change in consumer preference
C. Change in expectations

✖ **All of the following will shift the demand curve except:**

A. Change in price of the good
B. Change in consumer preference
C. Change in expectations

Contain only relevant material.

Irrelevant material can lead to a decrease in the reliability (i.e. test consistency) and validity (i.e. measuring what is meant to be measured) of the test scores.

✖ **While not all of the economic models display increasing opportunity cost, many scholars will agree that the understanding of the law of increasing opportunity cost is extremely important in understanding the allocation of resources. Which of the following can explain the existence of increasing opportunity cost?**

A. Change in prices of goods.
B. Scarce resources.
C. Resources not being equally suited for the production of all goods.
D. Indivisibility of goods in smaller units.

Ask a question, not a partial sentence.

An stem structured as a question is superior to a partial sentence. Research has shown that cognitive load is increased with a partial sentence because the learner must hold this in working memory as they read though each possible alternative.

✖ **In addition to growth, the business cycle, unemployment, and fiscal policy, _____ also falls under the area of macroeconomics.**

A. Monetary policy
B. Political economy
C. Game theory
D. Market failure

✔ **In addition to growth, the business cycle, unemployment, and fiscal policy, which of the following falls under the area of macroeconomics?**

A. Monetary policy
B. Political economy
C. Game theory
D. Market failure

Adapted from Vanderbilt University Center for Teaching, "Writing Good Multiple Choice Test Questions". URL: https://cft.vanderbilt.edu/guides-sub-pages/writing-good-multiple-choice-test-questions/

Question Examples: Green Border = Good Example I Red Border = Poor Example

DESIGNING ASSESSMENTS FOR LEARNING ONLINE - WRITING, PART 2

Use this document to begin designing effective assessments for multiple choice and checkbox questions. The strength of these kinds of questions is in their versatility. For instance, you can effectively measure learning outcomes for remembering, comprehending, applying, analyzing, and evaluating. Where they fall short however, is in measuring learners' abilities to organize thoughts and express creative ideas.

Recall that the assessments you design should always have a direct connection to the learning objectives so as to ensure measurement of instructional effectiveness. Additionally, through the process of designing a course, it is a good idea to continuously reflect upon and hone assessments.

Recall Assessment Variations on edX: **Multiple Choice Problem** | **Checkbox Problem** | **Dropdown Problem** | **Text or Numerical Input** | **Drag and Drop Problems**

DESIGNING EFFECTIVE SOLUTIONS/ALTERNATIVES:

State clearly and concisely.

Excessive wordiness requires more cognitive effort, but more importantly ends up testing the learners reading ability rather than measure their attainment of the learning objective.

✖ **The term economics is defined as:**

A. The term economics comes from the Ancient Greek οἰκονομία from οἶκος (oikos, "house") and νόμος (nomos, "custom" or "law"), hence "rules of the house (hold for good management). As such economics is defined as branch of knowledge focusing on the behavior of economic agents.
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Homogenous in content.

Heterogenous solutions/alternative can provide cues to the learner about the correct answer.

✖ **As a part of forecasting the real sector, we need to project which of the following?**

A. Financial account.
B. Current account.
C. Capital account.
D. Real GDP.

Present plausible solutions.

First, recall the section "Anatomy of an Assessment". The purpose of incorrect solutions/alternatives is to distract from the correct answer for those who did not achieve the learning outcome. Those who achieved the learning outcome will ignore these. For some plausible solutions, use common errors.

✔ **Who won the Sveriges Riksbank prize in economic sciences in 2015?**

A. Agnus Deaton
B. Thomas Piketty
C. Malala Yousafzai

Present without clues for the correct response.

Learners who are very careful in studying how a question is presented will be mindful to clues for the correct answer. Therefore, do the following: (1) use grammar consistent with the stem; (2) present parallel in form; (3) use similar length; and (4) use language similar to the course material.

No "All of the Above" or "None of the Above"

The use of these undermines the intent of an assessment - precisely testing whether or not learning outcomes were achieved. Such solutions/alternatives support the use of partial knowledge and encourage guessing when learners may be sure of one item but unsure of another.

Mutually exclusive.

Examples that contain overlapping content may be considered 'trick' items. In the example below, B overlaps with A, and C overlaps with A and B.

✖ **How many years does it usually take to earn doctorate in economics?**

A. 2-4 years
B. 3-5 years
C. 4-6 years

Present in logical order.

Presenting in a logical order helps to prevent bias. Doing so alphabetically or numerically is the best way.

Maximum of 5 options.

The number of solutions/alternatives used may depend on their scope and question type. However, in order to assist cognitive processing it is better to provide no more than 5 solutions/alternatives.

Adapted from Vanderbilt University Center for Teaching, "Writing Good Multiple Choice Test Questions". https://cft.vanderbilt.edu/guides-sub-pages/writing-good-multiple-choice-test-questions/

Question Examples: Green Border = Good Example I Red Border = Poor Example