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http://www.utexas.edu/academic/diia/assessment/iar/students/plan/method/

Assess Students: the Assignment

Overview

Assignments are tasks that require student engagement and a final tangible product. They are one of the most common ways to assess student learning. The type and number of assignments you will design depends on your course learning objectives and teaching goals.

Types of assignments

There are various types of assignments that are used to achieve different purposes:

- **Essays** are generally used to assess student comprehension over specific content and the ability to explain the material in their own words.
- **Writing or research papers** focus on student comprehension, ability to understand material, but depending upon the purpose of the paper, can also measure student's innovation or evaluation abilities.
- **Oral presentations** are mostly used as a method to assess oral presentational skills, understanding of the content, and ability to organize and structure material.
- **Projects** are an exceptional method to assess student's creation or innovation abilities. For example, a student has to understand the material, apply their understanding to another context, and construct a project based upon this comprehension.
- **Case studies** are generally used to apply class content to a specific individual, usually themselves.
- **Labs** are an ideal method to apply abstract ideas or theories to concrete experiences.
- **Group assignments** are able to assess interpersonal, communication, and collaborative skills of students. For collaboration, a student must be able to synthesize the material from group member and help create a group solution or product.

View assignment types by purpose

Suggested uses of assignments:

- Demonstration or development of higher level thinking skills (Bloom).
- Demonstration or development of writing skills
- Demonstration or development of oral presentations skills
- Observation or training of collaborative and interpersonal skills

Strengths of assignments:

- Easier and less time-consuming to construct than exams
- Promotes higher level thinking (application/synthesis/evaluation)
- Allows for a variety of student learning styles
- Transfer and generalization more likely than for exams

Limitations of assignments:

- Often requires additional resources (e.g., library or lab facilities)
- May use class time (e.g., group projects, presentations)
- More time-consuming to grade than exams
- May be less effective for introductory level content

Resource requirements

Knowledge about developing course learning objectives and constructing the various types of assignments is required. You should also understand how to use and interpret scoring rubrics and have a system for managing student products.

Plan your assignment

STEP 1. Understand the learning context

Consider the subject area, course content, class resources, and how the instructional setting and larger educational context impacts the learning course. Make sure to take into account the characteristics of the students such as demographics, skill level, and expectations of the course.

STEP 2. Identify needs and develop course learning objectives

Course learning objectives, shaped by what is most essential for students to know, your needs, and any instructional priorities, specify what you want students to learn from the course. For example, "The students will be able to demonstrate their knowledge of "Erikson's Psychological Stages of Development by naming the eight stages in order and describing the psychological crises at each stage." [more]

STEP 3. Determine the purpose of the assignment

Use the course learning objectives to guide the content and purpose of assignments. Specify the purpose of the assignment, and how you will measure success.

STEP 4. Determine how you will use the results

How the results will be applied are the underlying goals of your assignments. Consider whether you intend to use results for a formative assessment or summative assessment. Also, consider how much assignment scores will count toward the course grades.

STEP 5. Plan the assignment

Identify course goals and learning objectives

Individual assignments should be linked to course goals and specific learning objectives. The type of assignment you give should be based on what you intend students to learn. [more]

View assignment types by purpose

Determine the assignment format

After determining they type of assignment(s) you want students to complete, develop the specific details related to its content, requirements, and format. Provide students with as much detail about these issues as possible at the time you make the assignment. Be sure to include a final due date and, for more involved assignments like projects and research papers, due dates for drafts or other important assignment milestones.

Develop a rubric to evaluate the assignment

You should develop clear guidelines for evaluating assignments and provide them to students when you first explain the assignment. [more]

Additional information

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Assessing students: *Exams*

Overview

Writing effective and efficient exams is a crucial component of the teaching and learning process. Exams are a common approach to assess student learning and the results are useful in a variety of ways. Most often, results are used to provide students feedback on what they learned or evaluate the instructional effectiveness of a course.

Types of exam questions

There are generally two types of exam questions useful for measuring student learning each with there own sub-types:

- **Fixed-choice:**
    - o **Multiple-choice** questions ask students to select the correct response from one or more of the choices from a given list. [more]
    - o **True-false** questions are typically used to measure student's ability to identify whether statements of fact are correct. [more]
    - o **Matching** questions consist of a column of key words and a column of options, and require students to match the options associated with a given key word(s). [more]

- **Open-ended:**
    - o **Short answer** questions direct students to supply the appropriate words, numbers, or symbols to answer a question or complete a statement. [more]
    - o **Essay** questions require students to demonstrate through writing his/her ability to a) recall knowledge, b) organize this knowledge, and c) present the knowledge in a logical, integrated answer. [more]

Suggested uses of exams:

- Measure student learning
- Provide a basis for assigning course grades
- Compare student performance
- Provide feedback to students about their learning
- Guide course content or instruction

Strengths of exams:

- Fixed-Choice:
    - Ability to measure simple and complex learning outcomes
    - Scoring is easy and reliable
    - Can cover a lot of material very efficiently
- Open-Ended:
    - Are easier to create than other question types
    - Can effectively measure higher order cognitive learning

Limitations of exams:

- Fixed-Choice:
    - Writing good questions is time consuming
    - Difficult to measure higher-order thinking skills
- Open-Ended:
    - Time consuming to score
    - Difficult to measure a large amount of content or course learning objectives

Resource requirements

A moderate level of knowledge about course learning objectives and constructing questions is required. You should also understand how to use and interpret item analysis procedures (and/or scoring rubrics) and have experience in using databases (for large classes).

Plan your exam

STEP 1. Describe the assessment context

Consider the course content, class resources, and how the instructional setting and larger educational context impact the course. Make sure to include the age, majors, educational background, motivation level, and skill levels of students.

STEP 2. Identify student needs and develop course learning objectives

Course learning objectives, shaped by what is most essential for students to know, your needs, and any instructional priorities, specify what you want students to learn from the course. For example, "The students will be able to demonstrate their knowledge of "Erikson's Psychological Stages of Development by naming the eight stages in order and describing the psychological crises at each stage." [more].

STEP 3. Determine the purpose of the exam

Use the course learning objectives to guide the content and purpose of your exam. Specify how your exam will help you gain insight, change course or instructional practices, or measure student learning. For instance, is the purpose of your exam to measure students' performance on weekly assignments (low-stake quizzes) or is the

purpose of the exam to measure students' performance on midterm or final exams (high-stake exams)?

STEP 4. Determine how you will use the results

How the results will be applied are the underlying goals of your exam. Consider whether you intend to use results for a formative assessment, summative assessment, or an aid to improve future exams or instruction. Also, consider how much the exam score will count towards student course grades.

STEP 5. Create the exam

Choose between open-ended and fixed-choice questions.

Open-ended questions require students to write and present an original answer; this includes short answer, essay, problem-solving, and performance tasks.

In contrast, fixed-choice questions require students to select the correct response from several alternatives; this includes multiple-choice, true/false, and matching questions.

Choosing between open-ended and fixed-choice questions will depend on your course learning objectives and the advantages/disadvantages of each type. [more]

Create a blueprint

An exam blueprint helps ensure that your exam is obtaining the desired coverage of course topics and course learning objectives. [more]

Write exam questions

A general guideline for writing any type of exam questions is to make sure each question is based on a learning objective of the course, not trivial information. [more]

Additional information

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Multiple-choice questions

Multiple-choice questions are a method of assessment that asks students to select one choice from a given list. They typically have three parts: a stem, the correct answer – called the key, and several wrong answers, called distractors. Multiple-choice questions are most widely used for measuring knowledge, comprehension, and application of learning outcomes.

There are a number of different ways multiple-choice questions can be presented. The classic approach is the simple stem question or completion format followed by options. Two other approaches to presenting multiple-choice questions are the:

- Scenario-based approach
- Stanford rationale approach

Strengths

- Highly structured.
- Good at measuring student achievement
- Incorrect alternatives provide diagnostic information.
- Scores are less influenced by guessing than true-false questions.
- Scores are more reliable than open-ended questions (e.g., essays).
- Scoring is easy and reliable.
- Question analysis can reveal how difficult each question was and how well it discriminated between the strong and weaker students in the class
- Performance can be compared from class to class and year to year
- Can cover a lot of material very efficiently
- Avoids the absolute judgments found in True-False tests.

Limitations

- Constructing good questions is time consuming.
- Difficult to find plausible distractors.
- Ineffective for measuring some types of problem solving.
- Scores can be influenced by reading ability.
- Difficult to determine why individual students selected incorrect responses.
- Often fails to test higher levels of cognitive thinking.
- Does not provide a measure of writing ability.
- May encourage guessing.

Additional information

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Writing multiple-choice questions

General guidelines for writing good multiple-choice questions:

- Present practical or real-world situations to the students.
- Present the student with a diagram of equipment and ask for application, analysis or evaluation.
- Present actual quotations taken from newspapers or other published sources and ask for the interpretation or evaluation of these quotations.
- Use pictorial materials that require students to apply principles and concepts.
- Use charts, tables or figures that require interpretation.

Procedural rules:

- Use either the best answer or the correct answer format.
  - Best answer format refers to a list of options that can all be correct in the sense that each has an advantage, but one of them is the best.
  - Correct answer format refers to one and only one right answer.
- Format the questions vertically, not horizontally (i.e., list the choices vertically)
- Allow time for editing and other types of question revisions.
- Use good grammar, punctuation, and spelling consistently.
- Minimize the time required to read each question.
- Avoid trick questions.
- Use the active voice.
- The ideal question will be answered correctly by 60-65% of the tested population.
- Have your questions peer-reviewed.
- Avoid giving unintended cues – such as making the correct answer longer in length than the distractors.

Content-related rules:

- Base each question on student learning objective of the course, not trivial information.
- Test for important or significant information.
- Focus on a single problem or idea for each exam question.
- Keep the vocabulary consistent with the students' level of understanding.
- Avoid providing cues from one question to another; keep questions independent of one another.
- Use examples from course materials as a basis for developing your questions.
- Avoid overly specific knowledge when developing questions.
- Avoid textbook, verbatim phrasing when developing the questions.
- Avoid questions based on opinions.
- Use multiple-choice to measure higher level thinking.
- Be sensitive to cultural and gender issues.

Stem construction rules:

- State the stem in either question form (When did World War II begin?) or completion form (World War II began in _____.)
- The blank in completion questions should always be at the end of the stem.
- Stem directions should clearly indicate to students exactly what is being asked.

> **Example**
>
> 1. (Original-vague stem) World War II was:
>
> A. The result of the failure of the League of Nations.
> B. Horrible.
> C. Fought in Europe, Asia, and Africa.
> D. Fought during the period of 1939-1945.
>
> 1. (Revised) In which of these time periods was World War II fought?
>
> A. 1914-1917
> B. 1929-1934
> C. 1939-1945
> D. 1951-1955
> E. 1961-1969

- Avoid window dressing (excessive verbiage) in the stem.
- Word the stem positively; avoid negative phrasing such as "not" or "except." If this cannot be avoided, the negative words should always be highlighted by underlining or capitalization: Which of the following is NOT an example ......
- Include the central idea and most of the phrasing in the stem.
- Avoid giving clues such as linking the stem to the answer (…. Is an example of *an*:   test-wise students will know the correct answer should start with a vowel)

General option development rules:

- Place options in logical or numerical order.
- Use letters in front of options rather than numbers; numerical answers in numbered questions may be confusing to students.
- Keep options independent; options should not be overlapping.

Example

1. (Original-non mutually exclusive options) During what age period is thumb-sucking likely to produce the greatest psychological trauma?

A. Infancy
B. Preschool period
C. Before adolescence
D. During adolescence
E. After adolescence

2. (Revised) During what age period is thumb-sucking likely to produce the greatest psychological trauma?

A. From birth to 2 years old
B. From 2 years to 5 years old
C. From 5 years to 12 years old
D. From 12 years to 20 years old
E. 20 years of age or older

- Keep all options homogeneous in content.
- Keep the length of options fairly consistent (preferably short)
- Avoid, or use sparingly, the phrase *all of the above.*
- Avoid, or use sparingly, the phrase *none of the above*.
- Include from three to five options for each question.
- More than five options does not help discriminate performance
- Also, it is difficult to write more than five good options
- Avoid the use of the phrase *I don't know*.
- Phrase options positively, not negatively.
- Avoid distractors that can clue test-wise examinees; for example, absurd options, formal prompts, or semantic (overly specific or overly general) clues.
- Avoid giving clues through the use of faulty grammatical construction.

Example

1. (Original-faulty grammatical construction) Albert Eisenstein was a:

A. Anthropologist.
B. Astronomer.
C. Chemist.
D. Mathematician

2. (Revised) Who was Albert Einstein?

A. An anthropologist.
B. An Astronomer.
C. A chemist.
D. A mathematician.

- Avoid specific determinates, such as *never* and *always*.
- Position the correct option so that it appears about the same number of times in each possible position for a set of questions.
- Make sure that there is one and only one correct option.
- The greater the similarity among alternatives, the greater the difficulty.

Example

1. (Easy) Who was the President of the U.S. during the War of 1812?

A. Grover Cleveland
B. Abraham Lincoln
C. James Madison
D. Harry Truman
E. George Washington

1. (More difficult) Who was President of the U.S. during the War of 1812?

A. John Q. Adams
B. Andrew Jackson
C. Thomas Jefferson
D. James Madison
E. George Washington

Distractor (incorrect options) development rules:

- Use plausible distractors.
- Incorporate common errors of students in distractors.
- Avoid technically phrased distractors.
- Use familiar yet incorrect phrases as distractors.
- Use true statements that do not correctly answer the question.
- Avoid the use of humor when developing options.
- Distractors that are not chosen by any examinees should be replaced.

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True/False questions

True-false questions are typically used to measure the ability to identify whether statements of fact are correct. The questions are usually a declarative statement that the student must judge as true or false.

Strengths:

- Can cover a lot of content in a short time (about two questions per minute of testing time)
- The question is useful when there are only two possible alternatives.
- Less demand is placed on reading ability than in multiple-choice questions.
- Can measure complex outcomes when used with interpretive exercises.
- Scoring is easy and reliable.

Limitations:

- Difficult to write questions beyond the knowledge level that are free from ambiguity.
- False statements provide no evidence that the student knows the correct answer.
- Scores are more influenced by guessing than with any other question type.
- Cannot discriminate between students of varying ability as well as other questions.
- Requires that the answer to the question is absolutely true or false.

Common formats for true-false questions

Tips for writing true/false questions:

- Construct statements that are definitely true or definitely false, without additional qualifications.
- Use relatively short statements.
- Eliminate extraneous material.
- Keep true and false statements approximately the same length.
- Include an equal number of true and false questions.
- Test only one idea in each question.
- Have students circle T or F for each question rather than write the letter which can lead to debate.
- Avoid verbal clues, specific determiners (e.g., the, a, an), and complex sentences.
- Avoid absolute terms such as, never or always.
- Do not arrange answers in a pattern (i.e., TTFFTTFF, TFTFTF).
- Avoid taking statements directly from text.
- Always state the question positively.

Formats for true/false questions

Scantron (with A & B responses)

Example

The following questions are True-False questions. If the statement is true, darken the circle under A on your answer sheet; if the statement is false, darken the circle under B on your answer sheet. Be sure that the question number that you are marking on the answer sheet corresponds to the question number of the question you are answering.

- According to cognitive theorists, a learner will learn by rote if he lacks a cognitive structure.
- According to the cognitive theorists, learning something new is a matter of seeing where it "fits in."
- Bypassing less abstract stages of learning is sometimes desirable for the improvement of understanding without memorization.
- The *Readers' Guide to Periodical Literature* is the oldest indexing periodical that includes educational items.

Circle format

Example

The following sentences may (or may not) contain grammatical errors. In front of each question are a "C" and an "I". If the sentence is *grammatically correct*, circle the "C". If it is *grammatically incorrect*, circle the "I".

C I	1.	I heard you was at the bowling party.
C I	2.	He don't plan to study engineering at college.
C I	3.	Are you calling us?
C I	4.	The rear tires had wore out.

(You can also use 'T-F' letters for true-false statements.)

Circle format with correction

Example

The following questions are True-False questions. If the statement is *true*, *circle T*, and go to the next question. If the statement is *false, circle F,* write the specific portion of the statement that makes it false in *space A*, and rewrite the incorrect portion so that it is true in *space B.*

T	F	1. An achievement exam is designed to measure a pupil's ability to perform in school subjects. A _____ B _____
T	F	2. A profile is a graphic method for representing an examinee's scores on several exams. A _____ B _____
T	F	3. Intelligence is defined as innate ability. A _____ B _____
T	F	4. Individual intelligence exams are more reliable than group intelligence exams. A _____ B _____

Check all that apply

These questions can be viewed as a cluster-type true-false format. For each option a "yes-no" decision must be made. This format is especially useful for replacing multiple-choice questions that have more than one correct answer. In this case, each alternative is a separate scoring unit of one point.

Example

Which of the following terms indicates observable student performance? Check all that apply.

__Yes   __No   1.   Explains

__Yes   __No   2.   Identifies

__Yes   __No   3.   Learns

__Yes   __No   4.   Predicts

__Yes   __No   5.   Realizes

Matching questions

Matching questions consist of a column of key words presented on the left side of the page and a column of options placed on the right side of the page. Students are required to match the options associated with a given key word(s).

Strengths

- Simple to construct.
- Short reading and response time, allowing more content to be included in a given set of matching questions.
- Highly reliable exam scores.
- Well-suited to measure associations between facts.
- Reduces the effects of guessing.

Limitations

- Difficult to measure learning objectives requiring more than simple recall of information.
- Difficult to construct due to the problem of selecting a common set of key words and options.
- If options cannot be used more than once, the questions are not mutually exclusive; therefore, getting one answer incorrect automatically means a second question is incorrect.

Tips for writing matching questions

- Provide more possible options than questions.
- Use longer phrases as questions and shorter phrases as options.
- Keep questions and options short and homogeneous.
- Avoid verbal cues and specific determiners (e.g., the, a, an).
- Number each question and use alphabetical letters for the options.
- Specify in the directions the basis for matching and whether or not responses can be used more than once.
- Make all questions and all options the same type (e.g., a list of events to be matched with a list of dates).

Example

Original question: From Column II, select the name or date that is associated with the statement in Column I. Record your choice on the line preceding the question number. Each answer may be used only one time.

Column I		Column II
____ 1.	The year in which the Declaration of Independence was signed.	1. George Washington 2. Benjamin Franklin 3. Barry Bonds
____ 2.	The first President of the United States.	4. 1777
____ 3.	The year in which the Civil War began.	5. 1861
____ 4.	The baseball player who holds the home run record.	
____ 5.	The inventor of bifocals.	

Problems with this original question:

Neither the questions nor the options are homogeneous. The former call for answers that are both dates and names; the latter necessarily are a mixture of both.

There are an equal number of premises and alternatives.

The introductory statement fails to offer an adequate frame of reference for responding.

Example

Better question: Several inventions of historical significance are listed in Column I. For each question, select the name in Column II which is associated with that invention. Record your choice on the line preceding the question number. Remember that an answer may be used only one time.

Column I	Column II
_____ 1. airplane	a. John Baird
_____ 2. steamboat	b. Sir Frederick Banting
_____ 3. automobile	c. Henry Ford
_____ 4. radio	d. Benjamin Franklin
_____ 5. iron stoves	e. Robert Fulton
_____ 6. television	f. Marchese Marconi
	g. Orville Wright

Short answer questions

The short answer question requires students to supply the appropriate words, numbers, or symbols to answer a question or complete a statement. Reserve short answer questions for situations when supplying the answer is a necessary part of the learning outcome to be measured, such as:

- when the intent is to have students *recall* the information (instead of recognize it)
- where computational problems are used
- where a multiple-choice, true-false, or check all that apply would make the answer obvious.

Strengths

- Provides a wide sampling of content.
- Efficiently measures lower levels of cognitive ability.
- Minimizes guessing as compared to multiple-choice or true-false questions.
- Takes less time to complete than multiple-choice questions, so can cover more content area.

Limitations

- Difficult to phrase the question or incomplete statement so that only one answer is correct.
- Misspelling can be a problem, particularly when computer scored, making test scores a mixture of content learning and spelling skill.
- Difficult to measure learning objectives requiring more than simple recall of information.
- Often include more irrelevant clues than do other question types.
- More time consuming to score than multiple-choice or true-false questions.
- More difficult to score since multiple answers may have to be considered if the question was not properly written.

Tips for writing short answer question

- Questions should require a single word answer or a brief and definite statement.

Example

Indefinite: What is a red corpuscle? _____

Better: What structure in the blood carries oxygen to the cells of the human body?_____

Best: Which of the cells found in the human body carries oxygen to all other living cells?_____

- Avoid statements that are answered equally well by several terms.
- A direct question is often more desirable than an incomplete statement.
- Blank spaces should usually occur at the end of the statement rather than the beginning or within.
- Omit only key words. The meaning or main point of the question is lost if too many elements are removed.
- If the question requires a numerical answer, indicate the units in which it is to be expressed.
- Avoid verbal clues and specific determiners (e.g., the, an, a).

Example

Original: An _____ weighs less than a pound.

Revised: What unit of measurement is exactly 1/16th of a pound?_____

Essay questions

Essay exams are good to use when trying to determine what students know about a few broad topics. Essay exams typically consist of a small number of questions to which the student is expected to demonstrate his/her ability to:

- recall knowledge
- organize this knowledge
- present the knowledge in a logical, integrated answer

Students should be given the criteria used to grade the exams in advance to help them prepare for them.

Strengths

- Allows students to interpret and integrate their knowledge of course content.
- Easier and less time consuming to create than other question types.
- Provides a more realistic task for the student.
- Allows students to express individuality and creativity in their answers.
- Reduces guessing.
- Requires students to organize their own answers an
- to express them in their own words.
- Can efficiently **measure higher order cognitive objectives**.

Example

Example question for each cognitive learning level:

Example question	Learning level
What are the five sections of a research report?	Knowledge
In one sentence give the point of a written passage.	Comprehension
Given the data available on an issue, take a position and defend it.	Evaluation
Given an argument for the abolition of guns, enumerate the positive and negative points presented.	Analysis
Construct an original work which incorporates five common materials in sculpture.	Synthesis
Write a short poem in iambic pentameter.	Application
Given two opposing theories, design an experiment to compare them	Evaluation

Limitations:

- Time consuming to score.
- Students may complain about subjectivity in scoring.
- Difficult to measure a large amount of content.
- Generally has low test and scorer reliability.

- Can encourage bluffing.

Tips for writing essay questions:

- Specify the length of the answer desired for each question (e.g., number of words or pages)
- Require all students to answer the same questions.
- Indicate the relative importance of each question (e.g., time to be spent or points assigned).

Example

(Points: 10) 1. In order for an authoritarian government to maintain its….

(Time: 15 minutes) 1. In order for an authoritarian government to maintain its…

State questions precisely, clearly focusing on the desired answer.

Example

Original: Explain the interval combustion engine? How does it run?

Revised: Explain the interrelationship of the fuel, the mixture of fuel and air in the carburetor, and the piston in the operation of an internal combustion engine.

Suggestions for scoring:

- Test the question yourself by writing an ideal answer to it. Develop your scoring criteria from this answer.
- Use either analytic scoring (point system) or holistic scoring rubrics (an overall score based on a set of criteria).
- Provide students the general scoring criteria by which they will be evaluated prior to the examination.
- Read and evaluate each student's answer to the same question before scoring the next question.
- The student's identity should remain anonymous during scoring.
- Keep scores of previously read questions out of sight.
- Decide on a policy for dealing with incorrect, irrelevant, or illegible responses.
- Write comments about the responses.

Additional information

Marshall, J. C., & Hales, L. W. (1971). *Classroom test construction*. Reading MA: Addison-Wesley, p. 56.

Writing exam questions

- Begin writing questions well ahead of the time when they will be used; allow time for revision.
- Match questions to intended outcomes at the proper difficulty level to provide a valid measure of the instructional objectives.
- Be sure each question deals with an important aspect of the content area and not with trivia.
- Be sure that the problem posed is clear and unambiguous.
- Be sure that each question is independent of all other questions (i.e., a hint to an answer should not be unintentionally embedded in another question).
- Be sure the question has one correct or best answer on which experts would agree.
- Prevent unintended clues to the answer in the statement or question (e.g., grammatical inconsistencies such as 'a' or 'an' give clues).
- Avoid duplication of the textbook in writing exam questions; don't lift quotes directly from any textual materials.
- Avoid trick questions in an achievement exam. (Don't waste time testing how well the student can interpret your intentions).
- On a exam with different question formats (e.g., multiple-choice and true-false), one should group all questions of similar format together.
- Questions should follow an easy to difficult progression.
- Space the questions to eliminate overcrowding.
- Have diagrams and tables *above* the question using the information, *not* below.

Exam blueprint

Once you know the learning objectives and question types for your exam, you should create an exam blueprint. An exam blueprint consists of a chart representing the number of questions you want in your exam within each topic and objective level. The blueprint identifies the learning objectives and skills to test and the relative importance given to each. The blueprint also ensures that you obtain the desired coverage of topics for your assessment.

Example

40-question exam

	Topic A	Topic B	Topic C	Topic D	TOTAL
Knowledge	1	2	1	1	5 (12.5%)
Comprehension	2	1	2	2	7 (17.5%)
Application	4	4	3	4	15 (37.5%)
Analysis	3	2	3	2	10 (25%)
Synthesis		1		1	2 (5%)
Evaluation			1		1 (2.5%)
TOTAL	10 (25%)	10 (25%)	10 (25%)	10 (25%)	40

After creating your blueprint, begin writing questions that match the learning objective level for each topic area.

Assessing Students: the Portfolio

Overview

A portfolio is a collection of student work created for the purpose of demonstrating their learning or showcasing their best work. While portfolios are often associated with the visual arts, they are useful in any subject area. Portfolios may take a variety of formats including paper, hybrid, or electronic. [more]

Types of portfolio

There are various types of portfolios that are used to achieve different purposes:

- **Growth portfolios** are used to show student progress or growth over time. Additionally they are useful for assessing works in progress and identifying strengths and weaknesses in student products.
- **Presentation portfolios** focus on showing a student's best work or final accomplishments. They are also sometimes used to showcase an individual's skills and accomplishments.
- **Evaluation portfolios** are used to record overall student achievement for grading or placement purposes. They are also used to evaluate how well a student has met established course goals and standards throughout the term.

View examples of student materials by purpose for each type of portfolio

Suggested uses of portfolios:

- Summative (end of term or program) assessment of student learning
- Document student progress over time
- Facilitating peer feedback
- Presenting student work as a collection
- Assessing drafts and works in progress
- Presenting a student's best or final work
- Improving student engagement
- Student self-reflection about their work

Strengths of portfolios:

- Promotes student engagement
- Documents changes in student performance over time
- Assesses student work holistically
- Students have the opportunity to reflect on and evaluate their work

- Peer review possible
- Has flexible options which promotes individualization

Limitations of portfolios:

- Instructor must spend more time planning and coordinating
- Students may require more guidance from instructor
- Inappropriate for measuring students' factual knowledge

Resource requirements

Knowledge about developing course learning objectives and constructing individual assignments is required. You should also understand how to use and interpret scoring rubrics and have a system for managing individual student works and portfolios.

Plan your portfolio

STEP 1. Describe the assessment context

Consider the course content, class resources, and how the instructional setting and larger educational context impact the course. Make sure to include the age, majors, educational background, motivation level, and skill levels of students. Knowing the audience for whom the portfolio is intended is critical.

STEP 2. Identify needs and develop course learning objectives

Course learning objectives, shaped by what is most essential for students to know, your needs, and any instructional priorities, specify what you want students to learn from the course. For example, "The students will be able to demonstrate their knowledge of "Erikson's Psychological Stages of Development by naming the eight stages in order and describing the psychological crises at each stage." [more]

STEP 3. Determine the purpose of the portfolio

Use the course learning objectives to guide the content and purpose of the overall portfolio and individual assignments. Specify the purpose of the portfolio, what student products will be included, and how you will measure success.

STEP 4. Determine how you will use the results

How the results will be applied are the underlying goals of your portfolio. Consider whether you intend to use results for a formative assessment or summative assessment. Also, consider how much the portfolio score will count toward the course grades.

STEP 5. Plan the portfolio

Determine the audience for the portfolio. The type of portfolio you require should be determined by the intended audience and reason for creating it. The audience for a portfolio may include:

- Course instructors
- Students/Peers
- Potential employers
- College admission reviewers

Identify course goals and learning objectives. Like individual assignments and exam items, a portfolio should be linked to course goals and specific learning objectives. The type of portfolio you assign should be based on what you intend students to learn and how you intend to use it. The materials you ask students to include in their portfolios should align with the portfolio type and purpose [more]

Choose a portfolio format The kinds of student materials included and how you intend to use the portfolio will help you determine which format (paper, hybrid or electronic) is best. For example, if graphical or audio materials will be part of the portfolio, a paper portfolio format will not work or, if sharing materials is important, an electronic portfolio is best. [more]

Develop a rubric to evaluate the portfolio You should develop clear guidelines for evaluating the portfolio and provide them to students as they begin their portfolio. [more]

Additional information

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Portfolio formats

Comparison of portfolio formats			
	Paper	**Hybrid**	**Electronic**
Description	Most products are from classroom essays, problem sets, lab results, journal entries, and tests or photos of studio/lab work	In addition to paper products from the classroom, hybrid portfolios may include photos, video tapes, audio tapes, 3-D models.	Student products are created in electronic format and pictures, videos, audio and graphics are in digital formats.
Storage considerations	Physical storage requirements for binders and folders may be substantial depending on class size.	Physical storage requirements for binders, folders, disks, tapes and models may be substantial depending on materials and class size.	Can store in online portfolios or locally using specialized software. Some electronic systems are complex.
Accessibility of materials	Accessible to only one person at a time.	Multiple media formats may make accessibility difficult. Accessible to only one person at a time.	Online portfolios accessible to multiple individuals/groups at any time. Storage on a local computer limits accessibility but makes materials easier to share than other formats
Security	Must be physically secured in a cabinet or office. Copying is difficult.	Must be physically secured in a cabinet or office. Copying is difficult.	Can be password protected or access limited by class or group. Copies made easily.

Types of portfolios

Type	Purpose	Examples of potential materials
Growth portfolios	To show change over time	• Beginning and ending pieces of work/tests/writing drafts • Essays or journals on reflections of growth or goals
	To track the development of a skill	• Pieces of reflecting development of a specific skill • List of goals and reflections on advancement toward them • Essays identifying strengths and weaknesses
	To gauge levels of performance	• Drafts of the specific item or performance being tracked • Reflections on drafts • Feedback from instructors or peers
	To identify strengths or weaknesses	• Pieces of work representing identified strengths and weaknesses • Reflections on work samples • Goal lists and reflections on progress
Presentation portfolios	To present semester-end accomplishments	• Examples of best work • Test scores and other important grades • Awards and other recognitions • Earlier and later works to show progress • Earlier and later instructor and peer feedback
	To present examples of best work for employment of admissions	• Cover letter • Examples of best work • Reflective pieces on growth and skills • Instructor and peer feedback • Descriptions of what skills and knowledge examples represent •

	To present discernment of most important or favorite work	• Examples of student's favorite work • Student reflections on why it is their favorite work • Student reflections on what was learned • Comments on strengths and weaknesses of work • Instructor and peer feedback
Evaluation portfolios	To record student achievement for grading	• Works on each topic/subject graded • Examples of work demonstrating achievement of grade level/goals • Tests and scores • Student reflections of how the samples indicate certain levels of achievement • Instructor and peer feedback
	To record progress	• List of goals and standards • Examples of work paralleling goals and standards • Criteria for evaluating work • Instructor feedback on attainment of goals and standards • Student analysis of progress made toward goals during the semester or year
	To use as a placement test	• Samples of current work reflecting abilities • Earlier work samples showing progress • Test scores from class or external agencies • Self and instructor reflections on student aptitudes • Other professional reflections on student aptitudes