MEC1 - Foundations of Measurement and Evaluation
Course of Study

This course supports the assessments for Foundations of Measurement and Evaluation. The course covers 9 competencies and represents 2 competency units.

Introduction

Overview
As an educational professional, you will evaluate programs and make improvements. You may do this as a classroom teacher, building administrator, district personnel, or in other roles. You will also learn to understand and appropriately use the terms measurement, assessment, and evaluation as an education professional.

Getting Started
Welcome to Foundations of Measurement and Evaluation! The materials in the course will prepare you for success on the associated objective exam. You will learn to distinguish between the various concepts and terminology relevant to this subject, such as validity and reliability, and quantitative versus qualitative data. This course will familiarize you with many different types of assessment, types of evaluation research, and how to identify reliable means of measuring for effective learning. Please watch the welcome video below for a brief introduction to the course materials.

Watch the following video introduction for this course:

Note: To download this video, right-click the following link and choose "Save as...": download video.

Competencies

Competency 506.3.1: Qualitative Data Collection Tools and Techniques

The graduate employs appropriate qualitative data collection techniques and tools to collect data.

- Define types of qualitative data collected during assessment activities.
- Identify appropriate methods of collecting qualitative types of data.
- Recommend appropriate methods for collecting qualitative types of data.
- Identify techniques for quantifying qualitative data.
- Compare and contrast the use of questionnaires and interviews for data gathering in support of a specified performance goal.

Competency 506.3.2: Quantitative Data Collection Tools and Techniques

The graduate employs appropriate quantitative techniques and tools to collect data.

- Define types of quantitative data collected during assessment activities.
• Identify appropriate methods of collecting quantitative types of data.
• Recommend appropriate methods for collecting quantitative types of data.

Competency 506.1.1: Assessment Validity

The graduate understands essential information related to assessment validity.

• Define validity as it applies to assessment uses and score interpretations.
• Define types of validity evidence.
• Identify the purposes of content validity.
• Identify the purposes of criterion-related validity.
• Identify the purposes of construct validity.
• Recognize the criteria for gathering evidence of validity.
• Identify common threats to validity.
• Select a valid measure for a given testing situation.

Competency 506.1.2: Constructing Reliable Test Instruments

The graduate constructs reliable test instruments.

• Compare and contrast types of reliability.
• Recognize why reliability is an essential concept in testing.
• Identify different ways of determining if a test has reliability.
• Identify characteristics of reliability coefficients.
• Describe reasons for lower or higher reliability coefficients.

Competency 506.1.3: Item and Instrument Types

The graduate understands the appropriate uses of different instrument test item types in building assessments.

• Identify different uses of instrument types.
• Recognize situations in which specified types of assessment instruments would be appropriate.
• Recognize the advantages or disadvantages of using selected-response items.
• Recognize the advantages or disadvantages of using constructed-response items.
• Identify the components of a well-designed constructed response assessment.

Competency 506.2.1: Formative Evaluation

The graduate understands the fundamental elements of formative evaluations.

• Define formative evaluation.
• Identify the purposes of formative evaluation.
• Identify the components of formative evaluation.
• Evaluate the quality of given formative evaluation questions.
Competency 506.2.2: Summative Evaluation

The graduate understands the fundamental elements of summative evaluations.

- Define summative evaluation.
- Identify the purposes of summative evaluation.
- Identify the components of summative evaluation.
- Evaluate the quality of given summative evaluation questions.

Competency 506.2.3: Differences Between Formative and Summative Evaluation

The graduate understands the differences between formative and summative evaluation.

- Contrast the roles of stakeholders in formative and summative evaluation.
- Compare and contrast the purposes of formative evaluation and summative evaluation.
- Recognize whether formative or summative evaluation is appropriate in a given situation.

Competency 506.4.2: Implementation and Interpretation of Evaluation

The graduate completes an evaluation and reports the results and recommendations.

- Suggest revisions to correct weaknesses revealed by an evaluation.

Teaching Dispositions Statement
Please review the Statement of Teaching Dispositions.

Course Instructor Assistance
As you prepare to demonstrate competency in this subject, remember that course instructors stand ready to help you reach your educational goals. As subject matter experts, mentors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course instructors are excited to hear from you and eager to work with you.

Successful students report that working with a course instructor is the key to their success. Course instructors are able to share tips on approaches, tools, and skills that can help you apply the content you're studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don't work out on your first try, course instructors act as a support system to guide you through the revision process. You should expect to work with course instructors for the duration of your coursework, so you are welcome to contact them as soon as you begin. Course instructors are fully committed to your success!

Preparing for Success

The information in this section is provided to detail the resources available for you to use as you complete this course.
Learning Resources
The learning resources listed in this section are required to complete the activities in this course. For many resources, WGU has provided automatic access through the course. However, you may need to manually enroll in or independently acquire other resources. Read the full instructions provided to ensure that you have access to all of your resources in a timely manner.

Automatically Enrolled Resources

You can access the learning resources listed in this section by clicking on the links provided throughout the course. You may be prompted to log in to the WGU student portal to access the resources.

VitalSource E-Texts
The following textbooks are available to you as e-texts within this course. You will be directly linked to the specific readings required within the activities that follow.


Note: These e-texts are available to you as part of your program tuition and fees, but you may purchase hard copies at your own expense through a retailer of your choice. If you choose to do so, please use the ISBN listed to ensure that you receive the correct edition.

Other Learning Resources

You will use the following learning resources for this course.

WGU Library E-Reserves
This course utilizes resources located in the WGU Library E-Reserves, with articles available for you to download. For instructions on how to access WGU Library E-Reserves, see the "Accessing WGU Library E-Reserves" page.

The following e-reserve materials will be used in this course:


Pacing Guide
The pacing guide suggests a weekly structure to pace your completion of learning activities. It is provided as a suggestion and does not represent a mandatory schedule. Follow the pacing
guide carefully to complete the course in the suggested timeframe.

Week 1

- Introduction
- Measurement, Assessment, Evaluation, and Research

Week 2

- Assessment Validity and Reliability
- Complete your PAVA pre-assessment

Week 3

- Selected and Constructed Response Types

Week 4

- Quantitative and Qualitative Data Collection and Analysis

Week 5

- Formative Evaluation

Week 6

- Summative Evaluation

Week 7

- Differences Between Formative and Summative Evaluations
- Schedule and complete your MEC1 Exam

**Measurement, Assessment, Evaluation, and Research**

The activities in this section will introduce you to the concepts associated with the Measurement and Evaluation Domain.

**Evaluation vs. Research vs. Assessment**

*Assessment* and *evaluation* are not interchangeable terms. One way to keep them straight is to think "student assessment" and "program evaluation." Assessment means collecting information on an individual student's competence, ability, or improvement. Tests are only one type of assessment. There are different types of tests (e.g., achievement tests, aptitude tests, affective tests).

In this domain, you will be primarily interested in achievement tests. Assessment may be sorted into objective and authentic assessment categories. When you aggregate the assessment
results of a group of students, the average score could be a valuable part of the data collected for an evaluation of something larger than one student, such as a product or program.

**Evaluation vs. Research vs. Assessment**

Read the following selections from the *Program Evaluation* text:

- **Chapter 1 (“Evaluation's Basic Purpose, Uses, and Conceptual Distinctions”)**

As you complete the reading, answer the following questions in your study journal:

- What is evaluation? How does it differ from research?
- How are formative and summative evaluations different from each other?
- What is program evaluation? How does it relate to summative evaluation?
- What is assessment? How are evaluation and assessment related?

Write your answers in your study journal.

**Visual Exercise for Understanding**

Inasmuch as *evaluation*, *assessment*, and *research* are far too often used as synonyms for one another by education professionals, it would be worthwhile to take 20-30 minutes to consider how they are the same and how they differ.

In your notebook, separately list the characteristics and elements of

- assessment,
- evaluation, and
- research.

Characteristics and elements might include purposes, statistical analysis, and data gathering instruments, among others.

Identify the characteristics and elements that are similar. Identify the characteristics and elements that are different. Develop a Venn diagram that shows which of the characteristics and elements are similar and different.

Revisit and revise this diagram as you learn more about measurement and evaluation in this course of study.

**Types of Measurement**

Measurement is the process of determining how much there is of something and then documenting or recording that measure. For instance, you might give a test, score an individual's performance on an assessment, and then record the score. Measurement answers the question, "How much does the student know about the specified content?" WGU uses measurement throughout your program to determine and document your capability in each of the required assessments of competence. Measurement may be said to be the process that administers assessments, scores those assessments, and records the scores for future
Types of Measurement

In your study journal, list three different types of measurement that WGU uses with graduate students. Explain why you consider these to be examples of measurement.

Types of Assessment

In this topic, you will be introduced to broad categories of assessment.

Types of Assessment

In your study journal, reply to each of the following prompts:

- Explain what authentic assessment means to you and describe two examples. Discuss why these examples actually represent authentic assessment.
- Explain what you think objective assessment means and why it would be given the term objective. Is there subjective assessment?
- Give an example of how you have been on the receiving end of subjective assessments and your feelings about it. Is it possible to make all assessments objective? Explain your thinking about this.

Basic Types of Evaluation

You will note similarities and differences between evaluation and research, such as the following:

Similarities:

- Both have questions to answer (research questions, evaluation questions), which guide the planning and conducting of the respective processes.
- Both collect and analyze data to arrive at the results.
- Both report the results.

Differences:

- Research may use a hypothesis, while evaluation does not.
- The type and content of questions will differ.
- The purposes for initiating the procedures are different.
- The uses of results are varied.
- Reporting method depends on the type of procedure and the purpose for it.
- Research may use experimental and control groups while evaluation typically does not.
- Research uses subjects and evaluation uses participants.

Basic Types of Evaluation

Read the following chapters from the Systematic Design of Instruction text:

- Chapter 10 ("Designing and Conducting Formative Evaluations")
- Chapter 12 ("Designing and Conducting Summative Evaluations")
In your notebook/study journal answer the following question based on your reading:

- How does evaluation fit into the systematic design of instruction process?

**Assessment Validity and Reliability**

The activities for this section will introduce you to assessment validity and reliability. These concepts are used when you gather data to determine student progress, or for research or evaluation purposes. If the data collected are not accurate or credible, you cannot use them with confidence. These two concepts have been developed to enable those who collect data, and those who use the results of the analyzed data, to be able to know if they can rely on the results as truthful information.

**Validity Definition**

Have you ever taken an exam where you felt that the items did not cover the content, where the questions did not seem to make sense, or where you disagreed with the correct responses? That exam may have had validity issues. Assessment validity is when a test measures what it is intended to measure. When instruction and assessment (measurement) are out of alignment, validity will suffer.

**Validity Definition: Reading Assignment and Journaling**

Read the following chapter from the *Educational Research: Competencies for Analysis and Applications* text:

- Chapter 6 ("Selecting Measuring Instruments")

Read the following chapter from the *Classroom Assessment: What Teachers Need to Know* text:

- Chapter 4 ("Validity")

In your notes/notebook, create a section on validity and reliability. In your own words, write what validity means to you. Include how using assessments that are not valid can affect you and your students.

**Validity Evidence**

There are seven different types of validity that you will be introduced to during this course:

- face validity
- consequential validity
- content validity
- construct validity
- criterion-related validity
- concurrent validity
- predictive validity

**Validity Evidence: Reading and Journal**

Face validity is the easiest to determine for a test. You can ask yourself, "On the face of it, does
this test appear to be valid?" In other words, assuming you are qualified to make that judgment (i.e., the topic is one that you are qualified to teach), does the test measure what it should? If the answer is yes, you can say that the test has face validity. You can get your answer to this type of validity simply from a glance. If the test is supposed to be a geography test and it appears to measure the geography objectives and you are qualified to make that judgment, then you could say it has **face validity**.

Consequential validity is concerned with the social consequences that result from taking tests. As we administer more and more tests, **consequential validity** is the extent to which an instrument creates **harmful effects** for the user. Examining consequential validity allows researchers to identify tests or questions that may have bias, be harmful to test takers, or identify unintended problems.

Focus on assessment validity.

Write in your study journal three different types of validity and the ways that you could determine if a test has each of those types of validity.

**Content Validity**
Saying that a test has content validity is almost the same as saying it is valid in general. **Content validity** means that the test only includes items that are within the designated curricular area. If an algebra test has a few questions on geometry, then you would say the test does not have content validity. Generally, content validity is established by having a panel of subject matter experts review the test items to ensure that the items appropriately measure the content and objectives. Please note that it goes beyond face validity because you no longer just glance at the items to see if they appear to meet the objectives but you actually delve into the material to see if the items measure the actual content and objectives.

**Content Validity: Journal**

Write in your study journal three scenarios for when content validity would be important to use.

**Construct Validity**
Construct validity is very similar to content validity, but you must understand what a construct is (e.g., intelligence, personality, teacher effectiveness, ability, achievement, motivation,). A **construct** is an abstraction that cannot be observed directly; it is a **concept**, **idea**, or **specification** invented to explain behavior. To be measurable, constructs must be operationally defined, which means you must define them in terms of something that can be measured or observed. For instance, for the construct **personality**, you could define two types of personalities: introverts and extroverts and then create a questionnaire where one personality type would score low and one personality type would score high. For the construct **motivation**, you could define four levels of classroom motivation as: Highly Motivated, Motivated, Marginally Motivated, Not Motivated and create a survey with a scale to measure student motivation.

**Construct Validity: Journal**

Write in your notes/notebook three scenarios for when construct validity would be important to use. If you are, or have been, a classroom teacher, consider how your role would be impacted if the assessments you were using did not have construct validity. How might the assessment's
lack of construct validity become evident? Explain the difference and similarity between content and construct validity.

**Criterion-Related Validity**
The purpose of criterion-related validity is when you want to see what extent a test correlates highly with another test. Criterion-related validity means that the new test in question must have a criterion to relate to on that second test. A criterion is like a benchmark. It is something to gauge a variable against. There are two types of criterion-related validity: concurrent validity and predictive validity. Concurrent validity is the degree in which scores on one test are related to scores on a valid measure available at the same time. The relationship could be with measures such as grade point average (GPA), ACT scores, SAT scores, GRE, PRAXIS exams, etc. Predictive validity is similar to concurrent validity but instead of the measure being available at the same time, it uses future performance on the measure as the benchmark.

**Criterion-Related Validity: Reading Assignment**

Review the following chapter from the *Educational Research: Competencies for Analysis and Applications* text:

- Chapter 6 ("Selecting Measuring Instruments")

In your study journal, explain how the following types of validity would be determined for a new test:

- face validity
- consequential validity
- content validity
- construct validity
- criterion-related validity
- concurrent validity
- predictive validity

Answer the following question in your notes as well:

- Which types of validity do you think are the most useful for you in your job or position, and why?

**Threats to Validity**
Threats to validity include confusing test directions, unclear test items, vocabulary unknown to the test takers, complicated sentence structure, tests administered contrary to the directions, and cheating. Any of these issues may decrease the validity of a test because it would prevent accurate results from being determined.

Now that you have read and studied about the different types of validity, it is time to summarize this section of your course and to check your understanding of the different types of validity. Please read the [Validity Types document](#).

**Reliability's Importance**
Reliability is when a test consistently produces similar results. A test may be reliable without
being valid, but it cannot be valid without being reliable. Validity subsumes reliability.

**Reliability's Importance: Reading and Journal**

Review the following chapter from the *Educational Research: Competencies for Analysis and Applications* text:

- **Chapter 6 ("Selecting Measuring Instruments")**

Read the following chapter from the *Classroom Assessment: What Teachers Need to Know* text:

- **Chapter 3 ("Reliability of Assessment")**

After reading the chapter, reflect on the importance of reliability. Imagine how it would be if a test produced different answers and different scores each time it was used. Record your thoughts in your notes/notebook.

**Reliability Types**

Reliability may be established in a variety of ways, such as test-retest (also called stability reliability), split-half (also called internal reliability), equivalency, and inter-rater. Each serves a different purpose. This subject will examine reliability types.

**Reliability Types: Journal**

Read the **Reliability Types**.

In your notes/notebook, describe an experience you have had in testing for reliability. If you have never applied a test of reliability to an assessment, explain how doing so might have changed the experience you or your students had with an unreliable assessment.

**Determining Reliability**

Now that reliability has been defined and its importance pointed out, you must look at ways to determine if a test is reliable. The method used to determine an assessment's reliability is also used to name the type of reliability of an assessment. For example, if the split-half method for determining reliability of a test is used, then it can be said that the test has split-half reliability (internal reliability).

**Determining Reliability**

Try to come up with a new way to determine reliability. Write your ideas in your study journal.

**Reliability Coefficients**

Reliability coefficients are statistical means of estimating and interpreting the reliability of assessments. You will not need to use them for a formative evaluation, but you may include them in a summative evaluation. A perfect reliability coefficient is 1.00. However, nothing has 100% reliability. High reliability coefficients (>0.75) tend to indicate an assessment is highly reliable. Low values such as 0.25 would reflect that the assessment was not highly reliable. Please read through the following document to understand situations that would affect reliability coefficients:
Reliability Coefficients

Write your answers in your study journal to the following questions:

- Why is validity important in test construction?
- Why is reliability important in test construction?
- What are some threats to validity?
- Have you ever taken a test that was not valid? How did you make that determination? How did you feel about it?
- How do you keep from confusing validity and reliability?

Pre-assessment

Complete the following preassessment:

- PAVA

For details about this preassessment, see the "Assessment" tab in this course.

Selected and Constructed Response Types

Tests are generally divided into two categories: selected response and constructed response. For selected response, the test taker is asked to choose the correct answer from a group of responses provided by the test maker. Examples of selected response item types are multiple-choice, multiple-select, ranking, and matching items. For constructed response items, the test taker must provide the correct information in response to the prompt provided by the test maker. Examples of constructed responses are short answer questions and essay questions.

Selected Response Tests

Multiple-choice, true-false, and matching are generally considered to be selected response test items. A test item is one question or one problem that may be part of a test. For example, one multiple-choice question is one test item.

Developing quality assessments involves knowing how to select the best type of assessment to test an objective. Following that decision, the test developer must also use the appropriate principles for writing successful test items. The guidelines for developing good multiple-choice tests are numerous.

Selected Response Tests

Read the following chapter from *Educational Research: Competencies for Analysis and Applications*

- Chapter 6 ("Selecting Measuring Instruments")

Read the following article from the WGU Library E-Reserves:
• "The art of item development: Creating valid, high quality test and assessment items"

After completing the reading, follow the guidelines to develop three multiple-choice test items and state which guidelines you followed. Write them in your study journal and explain how following the guidelines helped you successfully develop the test items.

Also, answer the following question in your notebook/study journal:

• What type of mistakes might you have made if you had not followed the guidelines?

**Constructed Response Tests**

Constructed-response test items include performance tasks such as responding to essay prompts, creating portfolios, or developing other products. These are often grouped under the term "authentic assessment." It is important that an appropriate grading scheme be developed in conjunction with the task assignment.

WGU typically uses rubrics to aid in scoring performance tasks. A rubric's purpose is to make the evaluator's rating of materials objective rather than subjective. Subjective grading is done when graders use their own understanding and perceptions to determine the value of a student's performance task response. This approach is open to bias and unfair grading.

**Constructed Response Tests**

Read the following chapter from *Classroom Assessment: What Teachers Need to Know*:

• Chapter 7 ("Constructed-Response Tests")

After reading the chapter, write a performance task and develop a rubric to be used in scoring the task. Write these items in your study journal.

**Quantitative and Qualitative Data Collection and Analysis**

One important difference between educators with and without graduate degrees is how they understand, collect, and use data for decision making. Prior to graduate school, educators may consume information uncritically. In graduate school, students learn how to effectively collect and analyze data. An important part of this transition is in understanding that data from various sources have different characteristics in their use, analysis, and understanding. The activities for this section will introduce you to quantitative and qualitative data collection and analysis.

Data are generally divided into two categories: quantitative and qualitative. Each type of data generally has its own method of collection and analysis. However, as you will learn as these differences are discussed in more detail in the following topics, it is possible to quantify qualitative data.

**Quantitative Data Collection**

Quantitative data provide a quantity or numerical score, such as the scores from a test or rubric. They could also be measurements of height or days of attendance at school, but these are not commonly used for formative evaluation. However, summative evaluation might look at a wider variety of variables yielding quantitative information.
Quantitative Data Collection

Read this document on Data Types.

After reading the document, write in your study journal your thoughts about using quantitative data collection methods in an evaluation.

Qualitative Data

Qualitative data are typically recorded using words, as opposed to numbers used for quantitative data.

Read the following chapter from the Educational Research: Competencies for Analysis and Applications text:

- Chapter 14 ("Qualitative Data Collection").

After reading the chapter, write your thoughts about using qualitative data collection methods in an evaluation in your study journal.

Qualitative Data Collection

You might gather data through the method of field observation, which would be recorded in an observation log or in field notes. You might also gather videotape or audiotape as you observe. Other examples of qualitative data collection are interviews and focus groups.

Qualitative Data Collection: Journal

Write in your study journal two methods of qualitative data collection, such as method A and method B, and an instrument that could be used for method A and an instrument that could be used for method B.

Interviews

Interviews may be classified as structured, semi-structured, or unstructured.

Interviews

Review the following chapter from the Educational Research: Competencies for Analysis and Applications text:

- Chapter 14 ("Qualitative Data Collection").

After reading the chapter, write an open-ended question and a closed-ended question, identifying which is which in your study journal. Also, describe an experience you have had participating in an unstructured interview.

Qualitative Data Types

Another type of qualitative data collection is a survey. A survey uses questions to collect generally qualitative data, although it might be quantitative in nature or even a combination of quantitative and qualitative data. The line has become blurred in the use of the term survey. Survey used to mean the process of collecting data from questionnaires sent to many potential respondents. The word quantitative, however, has taken on a different meaning in recent years.
respondents (i.e., survey was used as a verb). But now it is sometimes used to indicate the questionnaire itself (i.e., survey is now used as a noun).

However, if you want to be precise, it is best to think of survey as a process of gathering data and questionnaire as the instrument containing the questions to be answered. In other words, you can conduct a survey, or you may survey participants to gain their input, but you would not write a survey. You would write or develop a questionnaire.

**Qualitative Data Types: Reading and Journal**

Read the following from *Program evaluation: Alternative approaches and practical guidelines* text:

- Chapter 16 (“Collecting Evaluative Information: Data Sources and Methods, Analysis, and Interpretation”)

As you read, reflect on experiences you have had in providing group input, preferably for a school purpose. Compare that to an experience providing individual input, such as in an interview.

Do you understand why each type of data collection has different pros and cons? Record your thoughts in your notebook.

**Qualitative Methodology**

Methodology is also called methods, but these terms mean the same thing. The process of collecting and analyzing data is the core of the evaluation procedure. This section in an evaluation proposal or report should include the setting, participants, data collection instruments, and analysis of the data.

For a qualitative study, more than one data set would be gathered to prevent results based on chance or bias. This general idea of collecting more than one data point from more than one source is called triangulation.

**Qualitative Methodology: Journal**

Think about why you would gather both quantitative and qualitative data for your formative evaluation. What is meant by the term triangulation, and why is it used? Record your thoughts in your notebook.

**Qualitative and Quantitative Data Analysis**

Data collection is not really useful if you do not analyze the data to obtain results. Suppose you had observed a classroom for 40 hours and faithfully recorded all you saw and heard in notebooks. You would have a pile of notebooks filled with data. But what does it all mean? How will you use that information? You must analyze the data.

**Qualitative and Quantitative Data Analysis: Assignment**

Review the following chapters from the *Educational Research: Competencies for Analysis and Applications* text:
Think of an experience you have had collecting quantitative data and an experience collecting qualitative data. How did you analyze each type of data? How would you do things differently if you could? Post your responses in your study journal.

**Instrument Types**

Instruments may be used to gather quantitative or qualitative data from individuals one at a time (e.g., interviews), or from a group at the same time (e.g., a focus group).

**Instrument Selection**

In order to plan an evaluation and to conduct it, you must decide on the methods of data collection that will enable you to answer your evaluation questions expeditiously and with all the data that will be useful for the evaluation. To choose the best instruments to use for an evaluation, you need a plan to aid the selection process. Ultimately, you will be the filter through which all the pertinent details will flow, but using a table with information such as the following will be helpful.

**Evaluation Questions**

- Was the instructional goal achieved?
- Which parts of the instruction were least interesting?

**Source of Data (Participant or Record)**

- learners (5th grade students)

**Data Collection Method/Instrument**

- end-of-unit assessment
- observation and field notes

Read the following document on the four main Instrument Types you need to be familiar with for the MEC1 exam and this course: Placement Tests, Performance Based Tests, Formative Assessments, and Summative Assessments.

**Instrument Types**

**Instrument Selection: Create a Data Collection Table**

Practice matching data collection methods, instruments, and categories of evaluation questions. Think about what and who the source of the data might be. Create a practice table, such as the one outlined under the topic "Instrument Selection" that would help you make decisions in
planning your evaluation.

Formative Evaluation

Formative evaluation is evaluation that leads to the improvement of a program or product. While you may use either qualitative or quantitative data, your decision is not whether or not you will use a program or product. Instead, you are collecting and analyzing data to determine ways to improve a product. At WGU, you will learn a systematic process of evaluation based on subject-matter-expert feedback, one-to-one delivery, and small group delivery. In addition, you will learn other characteristics and methods for formative evaluation.

The activities for this section will introduce you to formative evaluation. The basic components and process of formative evaluation will be discussed.

Formative Evaluation Defined

Begin with formative evaluation. What do you want to evaluate? You can formatively evaluate almost anything in the process of development; otherwise, the program is just completed, but has not yet been put into use.

Formative Evaluation Defined: Journal

Write in your study journal two products or programs for which a formative evaluation would be useful. Explain why you selected these programs or products.

Formative Evaluation Purposes

Once you have the subject of an evaluation in mind, you must decide what you want to know. For a formative evaluation of an instructional product, you will want to know if the instructional goal was accomplished and what portions of the product need revision. If the instructional goal is not achieved, no matter how interesting or how beautifully designed the product is, it is not serving its purpose. That would indicate the need for some major revision.

Formative Evaluation Purposes

Write in your study journal what you understand to be the purposes of formative evaluation.

Formative Evaluation Components

This subject will discuss formative evaluation components.

Formative Evaluation Components: Reading

Read the following document:

- Formative Evaluation Components

Formative Evaluation Components

In your study journal, write two aspects of formative evaluation that you learned from your reading in Program Evaluation that were not addressed previously in this course of study.

Formative and Summative Evaluation Stakeholders

All evaluations have stakeholders. There should always be someone who will be impacted by the results of the evaluation. However, the stakeholders of the formative evaluation are typically just the designer and developer of the instructional product, if it is a fairly small project. If it is a
large product or program, there will most likely be more stakeholders. For the size of product for WGU teacher candidates' formative evaluations, stakeholders are not included in the planning or reported to, but the designer and developer of the product is also the evaluator.

**Formative and Summative Evaluation Stakeholders: Journal**

Think about a program you are familiar with and identify who the stakeholders are for that program. Record your thoughts in your study journal.

**Evaluation Questions**

The list of evaluation questions should begin with "Was the instructional goal achieved?" The remaining questions should be open-ended and looking for weaknesses in the product (e.g., Which directions were not clear?). Four to six questions are usually adequate. These questions are not asked of participants, but are used by the evaluator to guide the entire evaluation.

**Evaluation Questions**

Write two formative evaluation questions, explain why they are appropriate for formative evaluation, and record them in your study journal.

**Evaluation Revisions**

Since improvement of the instructional product or program is the major purpose in conducting a formative evaluation, it is important that necessary revisions be identified and then implemented. A good way to determine a revision to make, after a weakness has been identified, is to ask the participants what revisions they would suggest. After making revisions at the end of each phase, you will again use the product or program with the new revisions in place to learn if the revision does indeed make the expected improvement.

**Evaluation Revisions: Reading and Journal**

Read the following chapter from the *Systematic Design of Instruction* text:

- Chapter 11 ("Revising Instructional Materials")

After reading the chapter, explain in your study journal how you will know which parts of a program should be revised and what revisions to make.

**Summative Evaluation**

A summative evaluation is usually used to inform a final decision. The activities for this section will introduce you to summative evaluation. The basic components and process of summative evaluation will be discussed.

**Summative Evaluation Defined**

Another term for summative evaluation is *program evaluation*. In the field of evaluation, most evaluations that are conducted are program evaluations. What this term means is that a program is being evaluated. A program for evaluation can be a product, project, or process.

**Summative Evaluation Defined: Journal**

Write in your study journal two products or programs for which a summative evaluation would be useful. Explain why you selected these programs or products.
Summative Evaluation Purposes
The purpose of program evaluation is to make a decision. The evaluation is conducted so the decision makers can make an informed decision by using the evaluation results. Examples of decisions that might be made are whether to continue using the program or to discontinue the program, to begin using a new program, or to compare programs and decide which one to institute. Summative evaluation is not conducted in order to make revisions to a program.

Summative Evaluation Purposes
Write in your study journal guide what you understand to be the purposes of summative evaluation.

Summative Evaluation Components
This subject will discuss summative evaluation components.

Summative Evaluation Components
Read the following document:

- Summative Evaluation Components

Review the following chapter from the Systematic Design of Instruction text:

- Chapter 12 ("Designing and conducting summative evaluations")

Read the following chapters from the Program Evaluation text:

- Chapter 1 ("Evaluation's Basic Purpose, Uses, and Conceptual Distinctions")
- Chapter 17 ("Reporting Evaluation Results: Maximizing Use and Understanding")

Write in your study journal two aspects of summative evaluation that you learned from the above readings that were not addressed previously in this course.

Summative Evaluation Questions
Evaluation questions for summative evaluation look at the effectiveness of the program, gathering data on both the positive and negative aspects of the program. In a business context, a summative evaluation question might look for return on investment (ROI). Remember, evaluation questions guide the entire evaluation, whether formative or summative in nature.

Summative Evaluation Questions
In your study journal, write two summative evaluation questions and explain why they are appropriate for summative evaluation.

Provide a context for reporting a summative evaluation and describe an appropriate reporting plan for the specified audience of stakeholders.

Differences between Formative and Summative Evaluation
The activities for this section will organize the differences between formative and summative
evaluation. Using the outline in the "Components of Evaluation" document, the basic differences between formative and summative evaluation will be discussed.

**Purposes of Formative and Summative Evaluation**

The subject of evaluation might be the same thing for either formative or summative evaluation, such as a faculty development program for high school teachers. However, the timing of the evaluation will determine which type of evaluation should be conducted. If the program is still in development or if the program is being implemented, a formative evaluation would be conducted. However, if the program has been in use for some time, then a summative evaluation would be performed.

The evaluator is typically the designer and developer of the program or product in a formative evaluation, while an external evaluator (not connected with the institution sponsoring the program) is often employed to conduct a summative evaluation.

A formative evaluation is conducted to discover weaknesses and glitches in the product so they can be revised to improve the program. Summative evaluation is conducted so that a well-informed decision can be made by designated stakeholders.

**Purposes of Formative and Summative Evaluation**

In your study journal, explain whether a purpose of formative or summative evaluation is to discover the effectiveness of a program or product. Provide the rationale for your thinking.

**Appropriateness of Formative or Summative Evaluation**

Evaluation phases are different for formative and summative evaluation. There are many different models for program evaluation, and WGU does not endorse a specific one. Therefore, no specific phases are designated for summative evaluation. Mainly, the evaluator will be sure to align the purpose of the evaluation (i.e., what decision will be made) with the evaluation questions and plan for data collection and analysis to answer the questions.

The final key difference between the two evaluation types is in reporting the results. It does not make sense to write a formal evaluation report for formative evaluation if the developers would be writing the results to themselves. But reporting to each stakeholder group is essential in summative evaluation, and that reporting must be accomplished in the format that will be most appropriate for each group of stakeholders.

**Appropriateness of Formative or Summative Evaluation**

In your study journal, list and explain three differences between formative and summative evaluation.

For a summary of formative and summative evaluation, please read the following document. The terminology used in this document mirrors the language you will see on your final exam for the course.
Congratulations on completing the activities in this course! This course has prepared you to complete the assessments associated with this course. If you have not already been directed to complete the assessments, schedule and complete your assessments now.