



This course supports the assessment for Research Design and Analysis. The course covers 10 competencies and represents 2 competency units.

Introduction

Overview

The Research Design and Analysis course focuses on applying strategies for effective design of empirical research studies. Particular emphasis is placed on selecting or constructing the design that will provide the most valid results, analyzing the kind of data that would be obtained, and making defensible interpretations and drawing appropriate conclusions based on the data.

Watch the following video for an introduction to this course:

Note: To download this video, right-click the following link and choose "Save as...": [download video](#).

Competencies

In this course, you will use the Acrobatiq Research Design and Analysis learning resource to master the following competencies:

- **Competency 2000.1.2: Quantitative Research**
The graduate analyzes the key aspects of quantitative research and characterizes the major approaches to quantitative research.
- **Competency 2000.1.3: Qualitative Research**
The graduate analyzes the key aspects of qualitative research and characterizes the major approaches to qualitative research.
- **Competency 2000.1.4: Mixed Method Research**
The graduate analyzes the key aspects of mixed methods research and characterizes the major approaches to mixed methods research.
- **Competency 2000.1.5: Action Research**
The graduate analyzes the key aspects of action research and characterizes the major approaches to action research.
- **Competency 2000.1.6: Measurement of Reliability and Validity**
The graduate analyzes different measurement scales and differentiates between reliability and validity, and their subtypes, as they relate to assessments.
- **Competency 2000.1.7: Quality of Research Results**
The graduate analyzes the characteristics of research quality and the potential threats to the quality of results in qualitative, quantitative, mixed methods and action research studies.
- **Competency 2000.1.8: Research Methods and Design**
The graduate applies and justifies appropriate research methods and design in quantitative, qualitative, mixed methods, and action research scenarios to address the



research question(s).

- **Competency 2000.1.9: Data Analysis**

The graduate evaluates and selects appropriate basic data and analysis techniques for quantitative, qualitative, mixed methods, and action research scenarios.

- **Competency 2000.1.12: Data Collection**

The graduate differentiates among the major methods of data collection, including their strengths and limitations in the selection of an appropriate method of data collection.

- **Competency 2000.1.13: Research Ethics**

The graduate analyzes ethical issues and identifies appropriate procedures for educational research.

Course Resources

The following types of learning activities are available as you progress through the learning resource:

- Explanatory content: This is the informational "meat" of every unit. It consists of short passages of text with information, images, explanations, and short videos.
- Learn By Doing activities: Learn By Doing activities give you the chance to practice the concept that you are learning, with hints and feedback to guide you if you struggle.
- Did I Get This? activities: Did I Get This? activities are your chance to do a quick "self-check" and assess your own understanding of the material before doing a graded activity.

You will learn more about each of these unique learning activities as well as other tips for effectively and efficiently using this learning resource as you read through Unit 1: Learning Strategies and Course Introduction.

To begin the Acrobatiq Research Design and Analysis course, simply click the Launch Course button below. In Acrobatiq, click the Introduction page and complete all learning modules, including all of the associated activities. Complete the performance assessment in Taskstream: further information on the performance assessment is available on the Assessment tab of this course.

[Launch Course](#)

Learning Resource Tips

Navigating the Learning Resource

Note: Although this course material can be accessed using a different URL, please always enter this course using the Launch Course button. Your work cannot be saved if you enter the course using a different URL.

Each time you enter the learning resource you will see the following:



- **Title menu** (at the very top right): includes three useful icons beside the course title
 - **Start Tour** (play button icon): take a quick tour of the navigational features in Acrobatiq
 - **My Account** (silhouette icon): review or change personal account settings
 - **Table of Contents** (three lines): display a horizontal table of contents without leaving your current page
- **Resume Working** (upper left): returns you to the page where you were most recently working
- **Search** (upper right): type a specific term and hit Enter to find instances of this term in the course
- **Page Number >** (upper right and lower right): type a specific page number and hit Enter to navigate directly there, or click the > arrow to navigate to the next page.
- **Table of Contents** (center): allows you to navigate by topic to a particular unit or module

Citing and Referencing the Learning Resource

An APA-style reference list entry for this Learning Resource:

Acrobatiq. (2015). *Research Design and Analysis*. Online Courseware accessed through Western Governors University.

In-text citation styles (the page number is displayed near the upper right of each content page):

- (Acrobatiq, 2015, p. 9)
- According to Acrobatiq (2015, p. 21), ...

Additional Research Domain Learning Resources

In addition to this course's Learning Resource, you may wish to use the following Acrobatiq courses:

[Launch Course](#) (C224)

[Launch Course](#) (C225)

For guidance citing and referencing these sources with the same author and publication year, see APA Style Blog's [Reference Twins: Or How to Cite Articles With the Same Authors and Same Year](#).

Lock In Your Progress

Once you are ready to start or are actively working in the Acrobatiq learning resource, lock in your progress. You only need to complete this step once; any future activity in Acrobatiq will be saved.

Mark this Activity Complete to Lock In Your Progress



Click the check mark above or below if you are actively engaged 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.
 - Review all tabs along the left side of the course portal: Learning Resource Tips, Mentor Support, Library Support, Accessibility Policy, and Student Support.
 - Locate and access the course community on the right side of the course portal: Course Announcements, Course Tips, Course Search, and Course Chatter.
- What to Expect
 - The following types of learning activities are available as you progress through the learning resource: Explanatory content; Learn by Doing activities; Did I Get This?; and Checkpoints.
- Unit 1: Learning Strategies and Course Introduction.
 - To begin the Course content, click on the "Launch Course" button located on the introduction tab page.
 - Strategies for Learning.
 - What you need to know about each unit.
 - Developing skills for independent learning.
 - Course Introduction.
- Unit 2: Introduction to Research Design and Analysis.
 - Introduction to the Unit.
 - Module 1: The Four Major Research Approaches.

Week 2

- Unit 3: Standardized Measurement and Assessments.
 - Introduction to the Unit.
 - Module 2: Defining Measurement
 - Module 3: Measurement Reliability versus Validity
- Unit 4: Data Collection
 - Introduction to the Unit.
 - Module 4: Methods of Data Collection.
 - Module 5: Constructing a Questionnaire.

Week 3

- Unit 5: Quality of Research Results.
 - Introduction to the Unit.
 - Module 6: Quality in the Four Major Approaches to Research.
 - Module 7: Threats to Validity, Trustworthiness, and Legitimation.
- Unit 6: Research Methods and Design



- Introduction to the Unit.
- Module 8: Quantitative Research Methods
- Module 9: Qualitative Research Methods and Mixed Methods.
- Module 10: Approaches to Research Design for Action Research

Week 4

- Unit 7: Determining an Appropriate Research Method and Design.
 - Introduction to the Unit.
 - Module 11: Selecting a Research Method and Design.
 - Module 12: Evaluating a Research Design in a Study.
- Unit 8: Data Analysis.
 - Introduction to the Unit.
 - Module 13: Descriptive Statistics.
 - Module 14: Inferential Statistics.
 - Module 15: Qualitative and Mixed Methods Analysis.
 - Module 16: Evaluating a Data Analysis in a Study

Week 5

- Final Steps.
 - Go to Taskstream to access Performance Tasks for this course.

Note: This pacing guide does not replace the course. Please continue to refer to the course for a comprehensive list of the resources and activities.

Mentor Support

As you prepare to successfully 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 help you prepare for another attempt. You should expect to work with course instructors for the duration of your coursework, and you are encouraged to contact them as soon as you begin. Course instructors are fully committed to your success!

You are assigned a Primary Course Instructor for this course: contact your Primary Course Instructor with questions or to schedule an appointment to chat. If your Primary Course



Instructor is unavailable, you may always contact researchdomain@wgu.edu with urgent issues or questions.

Research Approach Comparison Chart

The following chart briefly shows the characteristics of the four major approaches to research for simple comparison.

| | Quantitative | Qualitative | Action Research | Mixed Method |
|------------------------------|---|---|---|---|
| Underlying Philosophy | Things are stable, controlled Facts can be obtained | Things are dynamic; they change What is "true" depends on situation & setting | Goal to effect positive change Transformative | Things are complex Facts matter—but so do situations/opinions/personal understanding |
| Purpose | Test something To resolve To predict | Describe something Understand something | To address or correct every-day problems | To confirm To explore To expand breadth & scope of research |
| Viewpoint | Logical Empirical Deductive | Situational Inductive | Applied research Practical Realistic Participatory | Both deductive & inductive Multiple influences exist |
| Context | Controlled: context is not taken into consideration, but controlled via methodological procedures | Context matters; values, feelings, opinions, individual participants <i>matter</i> | Relevancy in a particular setting—often referred to as "local context" (school, classroom, district, community, etc.) Reflective | Compatibility; both perspectives important. Holistic & complex |
| Focus | Particularistic Specific; predetermined variables are studied | Holistic: to see the "big picture" | Problem-focused: focus on solving local problems | Pluralistic Multi-lens |
| Orientation | To solve To conclude To verify a predetermined hypothesis | To discover To explore | To resolve To make something better in local or immediate environment/setting | Explanation Expansion |
| Data | Numerical: data is in the form of numbers/numerical info Scales of | Narrative or visual: data is in the form of words, sentences, paragraphs, notes, | All types of data may be involved Many action research studies utilize both | Both numerical (quantitative) and narrative/visual (qualitative) |



| | | | | |
|---|--|---|--|--|
| | measurement for: ratio, ordinal or interval | or pictures/graphics/etc. | quantitative & qualitative data | |
| Data Analysis | Statistical techniques Descriptive statistics Inferential statistics | Generally accepted techniques for analyzing qualitative data such as reading/re-reading, coding, categorizing, emergence of themes | Combination of techniques Statistical techniques used for numerical data Qualitative techniques used for narrative/visual data | Combination of techniques Statistical techniques used for numerical data Qualitative techniques used for narrative/visual data |
| Instruments/ Methods of data collection | Tests Closed-ended Surveys Rating Scales Statistics; something is counted | Interviews Observations Focus Groups Open-ended Questi onnaires, etc. | <i>Typically</i> a mixture of quant & qual methods are used, (but doesn't have to be a mixture) | Mixture of instruments & methods |
| Results | Generalizable Findings can be generalized to other populations | Particular/specialize d findings Finding are less generalizable | Actions Learning Findings not typically generalizable | Comprehensive Thorough; complete Pragmatic knowledge |
| Validity Refers to overall trustworthine ss of data and overall study. | Correctness or truthfulness of the inferences made from study results 4 types of validity in quantitative: internal, external, construct, & statistical conclusions | Quality and trustworthiness of the study & data 5 types of validity in qualitative research: descriptive, interpretive, theoretical, internal & external | Trustworthiness in results of study Triangulating data from different sources/methods can strengthen validity | Mixed-methods studies must have strong quantitative & qualitative validity Trustworthiness of study overall |
| | Quantitative | Qualitative | Action Research | Mixed Method |

To save this chart on your computer or print it, [download the chart](#).