

# **Basic Course Items and Foundational Concepts**

**EDP 611**

# Welcome!

Measurement/Evaluation  
in Educational Psychology



**EDP 611:**  
**Measurement/**  
**Evaluation**  
**in Educational**  
**Psychology**  
**Summer 2022**



# Your Teacher

Dr. Abhik Roy



# Overview

**You can measure many things** Measurement is a principle trait and whether it is hard wired, learned, or some combination of both, its absence makes quantitative data impossible to classify. Even in cases where measures are available, how can we know if they are consistent and accurate? Without these checks, instruments such as surveys could never be constructed, much less yield results that could be generalized.

When assessing existing programs, having an ability to test a hypothesis is key in understanding its goals. While evaluation tells us whether a program is producing results or having an effect/impact, (performance) measurement tells us what a program did and how well it did it. In particular, the latter is a necessity and involves collecting and reporting data that can be used to compartmentalize the way a program is being implemented.

# Course Objectives

Assess the credibility and ethics of measurement practices

Confidently determining valid and reliable measures

Interpret and report psychometric properties of tests

Recognize measurement in the evaluative process

Understand the methods and techniques for establishing and evaluating reliability and validity

# Hope

By the end of this course, you will hopefully become

1. literate in the connection between data and measurement principles
2. a skeptic of every research question or purpose that you come across

# Course Materials

- eCampus access: for submissions and grades only
- Readings and Training pages

# Helpful References

To help minimize costs, there is no formal text. We'll rely on the text below which is available through the WVU library in an online capacity barring the APA 7th edition handbook.

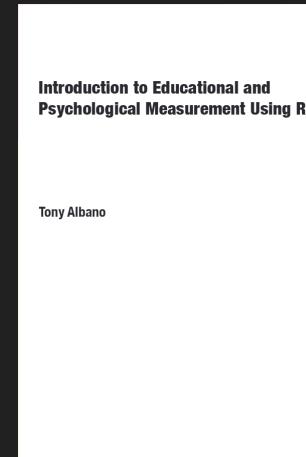
Balkin, R. S., & Kleist, D. M. (2016). *Counseling Research: A Practitioner-Scholar Approach*. American Counseling Association.

- Free: Digital edition
- Not Free: Softcover edition - ISBN: 9781556203572

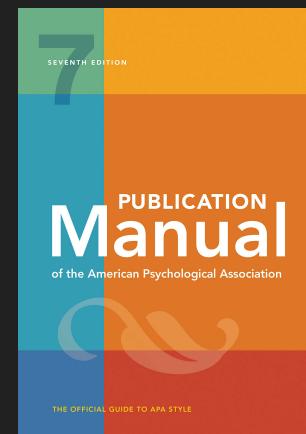


Albano, T. (2020). Introduction to Educational and Psychological Measurement Using R.

- Free: <https://thetaminusb.com/intro-measurement-r/> .

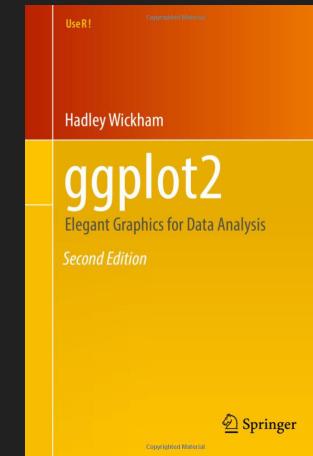


American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.).



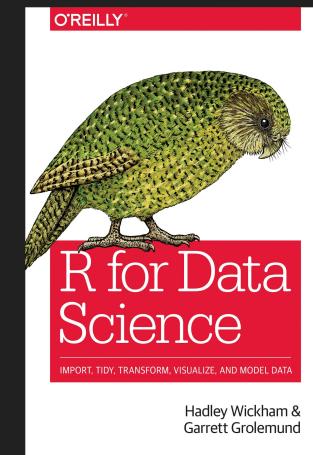
Wickham, H., Navarro, D. & Pedersen, T.L. (2021). *ggplot2: Elegant Graphics for Data Analysis* (2nd and 3rd eds.). Springer.

- Free: Digital edition
- Not Free: Hardcover edition - ISBN: 9783319242750



Wickham, H. (2021). *R for Data Science* (1st ed.). O'Reilly Media.

- Free: Digital edition (web)
- Free: Digital edition (WVU libraries)
- Not Free: Hardcover edition - ISBN: 9781491910399



*There will also occasionally be additional articles and videos to read and watch. When this happens, links to these other resources will be included on the content page for that session.*

# Class Focus on

## Content

- Readings
- Psychometrics
- No exams

## Practice

- R Modules
- R Walkthroughs
- Proposal

# What I expect

- Keeping an open line of communication
- Asking questions
- Participating like crazy
- Meeting with me on Zoom

# Assignments and Grades

You can find descriptions for all the assignments on the tasks page.

Percent	Task	Location
15	R Training	Data Camp
15	Reflections	Slack
15	R Measurement EDA	eCampus/Slack
15	Check-ins	Zoom
30	Proposal	eCampus/Slack
10	Elevator Pitch	eCampus/Slack

*The Proposal is scored from a combination of six weekly tasks. The Elevator Pitch and Proposal together is considered to be your final task.*

# Grading

Grade	Range
A	90% – 100%
B	80% - 89%
C	70% – 79%
D	60% – 69%
F	< 60%

# Things We Cover About Measurement

- controversies in testing
- interpretation of test scores norms
- test construction and scales
- writing and using educational objectives

# Keep These in Mind

## *Measurement*

- is the determination of attributes or dimensions of an object, skill or knowledge
- does not care about your feelings or views
- demands ethics and trust

# Common Sense v. Science!

Common Sense - Grounded in how we come to know the world

- Subjective
- Objective

Science - Grounded in prominent theoretical constructs

- Epistemology
- Methodology

# How do we know things?

- Beliefs
- Intuitions
- Logic
- Opinions of others
- Personal experiences
- Scientific method
- Sensory experiences
- Traditions
- Failures!

# Human Nature v. Science!

## Human Nature

- usually observations are inaccurate
- generalize from a few cases
- observe selectively to see what we're looking for
- make things up to fulfill gaps
- get personally and emotionally involved
- form views with little or no revisions and stick with them
- think we can figure out everything

## Science

- ensure observations are accurate
- explicitly sample for generalizing
- consciously decide what and how to observe
- base conclusions on evidence alone
- respect scientific norms regardless of opinions
- constantly revise views
- accept that not everything is knowable

**That's it. If you have questions, please send them along!**