

Course Introduction

Module 1: The Science of Psychology Part 1

Psychology is the scientific study of behaviour and its physiological, cognitive (mental processes) and social bases. It is a research-based, scientific discipline and Psychological Research Methodology I will introduce you to the theory and practice of research in psychology.

In this course you will learn about:

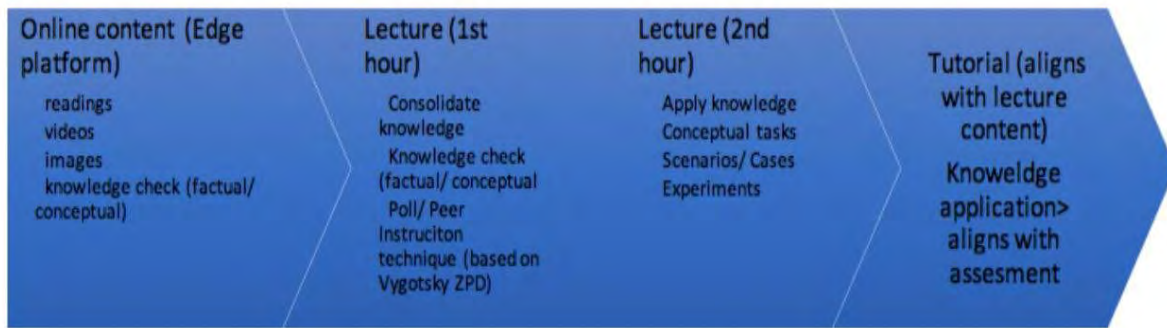
- science and the scientific method
- research methodologies, techniques and designs
- the practice and problems of measurement in psychology
- exploring, displaying, describing and analysing research data
- scientific report writing in psychology.

Learning about research methods and statistics will develop your ability to read and evaluate research reports. You will gain the skills needed to conduct good research and will develop a systematic way to ask questions, collect observations, and evaluate evidence.

Learning Objectives

After successfully completing this course you should be able to:

1. Understand and appreciate the scientific and research base of psychology.
2. Identify and describe basic research designs and apply them appropriately.
3. Identify and describe appropriate measurements in psychology research and apply them appropriately.
4. Explore, display, describe and analyse research data.
5. Design and conduct a simple research study.
6. Develop skills in scientific report writing in psychology



Module 1: the science of Psychology Part 1

Aron, A., Aron, E., & Coups, E. (2014). *Statistics for Psychology: Pearson New International Edition* (6 ed). Pearson

Research report help: Burton, L.J. (2007) *An interactive approach to writing essays and research reports in psychology* (2nd Edition).

How to learn

Sophocles (ca. 496 - 406 b.c.) is quoted as saying “One must learn by doing; for though you think you know it; you have no certainty until you try.”

Module 2: the science of Psychology Part 2

The readings for Module 2 are: Chapter 1 of Grove, P.M. (2020) *The scientific process and experimental design*.

Epistemology

BIAS

1. Overgeneralization
2. Selective perceiving
3. Authority

Sources of knowledge

4. Logic
5. Empiricism
6. Scientific method (combo of both)

Theory, experiments and statistics

4 Main goals of science in Psychology

1. Describe Behaviour; neural activity, physical attributes or decisional processes
2. Explain behaviour; why, environmental effect, another people effect?
3. Predict behaviour; when occur, specific conditions that bring it on
4. Control behaviour; identify and manipulate critical factors that promote or discourage

Theories

Theories explain why a behaviour occurs

Fulfil all four goals

Summarise existing knowledge

Outlines relationships

Explains phenomenon of interest

Serves as a basis of a hypothesis

Hypothesis

Take theoretical claim and apply it to a setting

Null Hypotheses H_0

NO difference between the groups being compared or NO systematic change in one variable that is tied to another variable

Alternative Hypothesis H_1

Shows there IS a difference between the groups comparing or IS a systematic change in one variable that is tied to another variable.

Experiments

Used to reduce outside influence and eliminate alternatives

Reduce noise in data

Statistics

enables us to decide which hypothesis is in favour

test whether chance explains to observed difference between groups

Principles of science

1. Objectivity

Supportive evidence must be observable by any person.

2. Scepticism

Claim must be backed up with evidence that is carefully and critically evaluated.

3. Openness/open mindedness

Need to describe conditions under which the observations were made. Need to be able to reproduce conditions. When different observers agree then observations are reliable.