# Instructor Manual

Mike Aamodt, Industrial/Organizational Psychology: An Applied Approach, 9e, 2023, 9780357658345; Chapter 1: Introduction to I/O Psychology

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## Purpose and Perspective of the Chapter

This chapter is designed to introduce a student to the field of industrial/organizational psychology. Students will learn about the history of the field, what industrial/organizational psychologists do, and research in industrial/organizational psychology.

## Cengage Supplements

The following product-level supplements provide additional information that may help you in preparing your course. They are available in the Instructor Resource Center.

* Transition Guide (provides information about what’s new from edition to edition)
* Instructor Manual (contains outlines, suggested activities, and resources for instructor use in the course)
* PowerPoint (provides text- and image-based lectures with active learning activities)
* Test Bank (contains assessment questions and problems)
* Guide to Teaching Online (provides technological and pedagogical considerations and resources for teaching online)
* Workbook (contains exercises to help students apply what they’ve learned)
* Stats Primer (brief guide on understanding statistics)

## Chapter Objectives

The following objectives are addressed in this chapter:

* 1. Define I/O psychology.
  2. Describe what I/O psychologists do.
  3. Summarize the history of I/O psychology.
  4. List the admissions requirements for graduate programs in I/O psychology.
  5. Explain the importance of conducting research.
  6. Describe how to evaluate I/O psychology research.
  7. Differentiate various research methods.

## Complete List of Chapter Activities and Assessments

For additional guidance refer to the Teaching Online Guide.

|  |  |  |  |
| --- | --- | --- | --- |
| Chapter Objective | PPT slide | Activity/Assessment | Duration |
| 01.01 Define I/O psychology. | 4, 6-7 |  |  |
| 01.02 Describe what I/O psychologists do. | 14 |  |  |
| 01.03 Summarize the history of I/O psychology. | 8-13 |  |  |
| 01.04 List the admission requirements for graduate programs in I/O psychology. | 15 |  |  |
| 01.05 Explain the importance of conducting research. | 18 |  |  |
| 01.06 Describe how to evaluate I/O psychology research. | 19-23, 42-43, 45-50 | Activity: Knowledge-Check Questions | 5 minutes |
| 01.07 Differentiate various research methods. | 24-27, 28-41  Workbook  Workbook  Workbook | Activity: Knowledge- Check Questions  Exercise 1.1  Research Designs  Exercise 1.2  Designing a Study  Exercise 1.3  Reviewing Research Articles | 10 minutes  20 minutes  10 minutes  10 minutes |
| All Objectives | 2  54 | Icebreaker  Self-Assessment | 10 minutes  5 minutes |

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## Key Terms

**Industrial-organizational psychology:** A branch of psychology that applies the principles of psychology to the workplace.

**Personnel psychology:** The field of study that concentrates on the selection and evaluation of employees.

**Organizational psychology:** The field of study that investigates the behavior of employees within the context of an organization.

**Human factors:** A field of study concentrating on the interaction between humans and machines.

**Army Alpha:** An intelligence test developed during World War I and used by the army for soldiers who can read.

**Army Beta:** An intelligence test developed during World War I and used by the army for soldiers who cannot read.

**Hawthorne studies:** A series of studies, conducted at the Western Electric plant in Hawthorne, Illinois, that have come to represent any change in behavior when people react to a change in the environment.

**Hawthorne effect:** When employees change their behavior due solely to the fact that they are receiving attention or are being observed.

**Graduate Record Exam (GRE):** A standardized admission test required by most psychology graduate schools.

**Terminal master’s degree programs:** Graduate programs that offer a master’s degree but not a Ph.D.

**Internship:** A situation in which a student works for an organization, either for pay or as a volunteer, to receive practical work experience.

**Practicum:** A paid or unpaid position with an organization that gives a student practical work experience.

**Dissertation:** A formal research paper required of most doctoral students to graduate.

**Hypothesis:** An educated prediction about the answer to a research question.

**Theory:** A systematic set of assumptions regarding the cause and nature of behavior.

**Journals:** A written collection of articles describing the methods and results of new research.

**Trade magazines:** A collection of articles for those “in the biz,” about related professional topics, seldom directly reporting the methods and results of new research.

**Magazines:** An unscientific collection of articles about a wide range of topics.

**External validity:** The extent to which research results can be expected to hold true outside the specific setting in which they were obtained.

**Generalizability:** Like external validity, the extent to which research results hold true outside the specific setting in which they were obtained.

**Field Research:** Research conducted in a natural setting as opposed to a laboratory.

**Informed consent:** The formal process by which subjects give permission to be included in a study.

**Institutional review boards:** A committee designated to ensure the ethical treatment of research subjects.

**Cause-and-effect relationships:** The result of a well-controlled experiment about which the researcher can confidently state that the independent variable caused the change in the dependent variable.

**Experiment:** A type of research study in which the independent variable is manipulated by the experimenter.

**Manipulation:** The alteration of a variable by an experimenter in expectation that the alteration will result in a change in the dependent variable.

**Independent variable:** The manipulated variable in an experiment.

**Dependent variable:** The measure of behavior that is expected to change as a result of changes in the independent variable.

**Experimental group:** In an experiment, the group of subjects that receives the experimental treatment of interest to the experimenter.

**Control group:** In an experiment, the group of subjects that does not receive the experimental treatment of interest to the experimenter, so that their results can be compared with those of subjects who do receive the treatment.

**Quasi-experiments:** Research methods in which the experimenter either does not manipulate the independent variable or in which subjects are not randomly assigned to conditions.

**Archival research:** Research that involves the use of previously collected data.

**Effect size:** Used in meta-analysis, a statistic that indicates the amount of change caused by an experimental manipulation.

**Mean effect size:** Used in meta-analysis, a statistic that is the average of the effect sizes for all studies included in the analysis.

**Correlation coefficient:** A statistic, resulting from performing a correlation, that indicates the magnitude and direction of a relationship.

**Difference score:** A type of effect size used in meta-analysis that is signified by the letter *d* and indicates how many standard deviations separate the mean score for the experimental group from the control group.

**Practical significance:** The extent to which the results of a study have actual impact of human behavior.

**Random sample:** A sample in which every member of the relevant population had an equal chance of being chosen to participate in the study.

**Convenience sample:** A nonrandom research sample that is used because it is easily available.

**Random assignment:** The random, unbiased assignment of subjects in a research sample to the various experimental and control conditions.

**Debriefing:** Informing the subject in an experiment about the purpose of the study in which they were a participant and providing any other relevant information.

**Correlation:** A statistical procedure used to measure the relationship between two variables.

**Intervening variable:** A third variable that can often explain the relationship between two other variables.

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## What's New in This Chapter

The following elements are improvements in this chapter from the previous edition:

* New material added to the history of I-O psychology
* Increased coverage of the 1940’s and 1950’s
* Discussion of the role of the global pandemic
* Updated salary information
* Updated information on GRE scores
* Updated list of I-O journals

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## Chapter Outline

*In the outline below, each element includes references (in parentheses) to related content. "CH.##” refers to the chapter objective; “PPT Slide #” refers to the slide number in the PowerPoint deck for this chapter (provided in the PowerPoints section of the Instructor Resource Center). Introduce the chapter and use the Ice Breaker in the PPT if desired, and if one is provided for this chapter. Review learning objectives for Chapter 1. (PPT Slide 3).*

1. Student Engagement Prior to Class
   1. Have your students complete Workbook Exercise 1.2 on Designing a Study and remind them to bring their completed exercise to class. As an alternative, you might want to have them complete this exercise in groups at the conclusion of your lecture on research methods.
2. Defining I/O Psychology (01.01, PPT Slide 4)
   1. A branch of psychology that applies the principles of psychology to the workplace (Aamodt, 2023)
   2. Differentiating between topics in I/O psychology and business programs (PPT Slide 6)
      * I/O psychology examines factors that affect the *people* in an organization, as opposed to the broader aspects of running an organization such as marketing and accounting.
   3. Three major fields of I/O psychology: personnel psychology, organizational psychology, human factors/ergonomics (PPT Slide 7)
      * Personnel psychology: analyzing job requirements, recruiting applicants, selecting employees, determining salary levels, training employees, and evaluating employee performance.
      * Organizational psychology: concerned with the issues of leadership, job satisfaction, employee motivation, organizational communication, conflict management, organizational change, and group processes within an organization.
      * Human factors/ergonomics: concerned with workplace design, human-machine interaction, ergonomics, and physical fatigue and stress.
3. Summarizing the history of I/O psychology (01.03, PPT Slide 8)
   1. 1900-1920s (PPT Slide 8)
      * 1903: Walter Dill Scott
      * 1913: Hugo Munsterberg
      * 1917: Journal of Applied Psychology
      * 1918: WWI provides first opportunity for I/O psychology application
   2. 1920-1940s (PPT Slide 9)
      * 1921: First Ph.D. in I/O Psychology awarded
      * 1932: First I/O text written
      * 1933: Hawthorne studies published
      * 1937: American Association for Applied Psychology established
   3. 1940-1960s (PPT Slide 10)
      * 1945: Society for Industrial and Business Psychology established (Division 14)
      * 1951: Marion Bills elected as first woman president of Division 14
   4. 1960-1980s (PPT Slide 11)
      * 1964: Equal Pay Act Passed
      * 1964: Civil Rights Act passed; first issue of *The Industrial-Organizational Psychologist* published
      * 1970: Division 14 membership exceeds 1,100
      * 1971: B. F. Skinner publishes *Beyond Freedom and Dignity*
      * 1980: Division 14 membership exceeds 1,800
   5. 1980-2000s (PPT Slide 12)
      * 1982: Division 14 renamed Society for Industrial and Organizational Psychology (SIOP)
      * 1986: SIOP holds first annual national conference separate from APA meeting
      * 1989: Supreme Court sets conservative trend and becomes more “employer friendly”
      * 1990: Americans with Disabilities Act passed; SIOP membership exceeds 2,800
      * 1991: Civil Rights Act of 1991 passed to overcome 1989 conservative Supreme Court decisions
      * 1997: SIOP celebrates golden anniversary at its annual conference in St. Louis
      * 2000: SIOP membership exceeds 5,700
   6. 2000-2020s (PPT Slide 13)
      * 2005: Office of Federal Contract Compliance Programs (OFCCP) and Equal Employment Opportunity Commission (EEOC) become more aggressive in fighting systematic discrimination
      * 2008: Industrial and Organizational Psychology: Perspectives on Science and Practice begins publication
      * 2009: Lily Ledbetter Fair Pay Act and Americans with Disabilities Act Amendment Act (ADAAA) passed
      * 2010: SIOP membership exceeds 8,000
      * 2013: OFCCP issues new regulations affecting the hiring of military veterans and individuals with disabilities
      * 2020: SIOP membership exceeds 7,500
4. Describing what I/O psychologists do (01.02, PPT Slide 14)
   1. Various different employment settings: education, private sector, public sector, and nonprofit sector.
      * Education: typically teach and conduct research.
      * Private sector, public sector, and nonprofit: help a variety of organizations become more productive through application of personnel psychology, organizational psychology, and human factors/ergonomics.
5. Listing the admission requirements for graduate programs in I/O psychology (01.04, PPT Slide 15)
   1. Minimum score of 300 on the Graduate Record Exam (GRE)
   2. Terminal master’s degree programs: best suited for students wanting an applied HR position in an organization
   3. Doctoral programs: best suited for students who eventually want to teach, do research, or consult
   4. I/O graduate programs (PPT Slide 16)
      * Master’s programs: 40 hours of graduate coursework
        1. Completion of an internship or practicum
        2. Comprehensive and/or written examination required to pass for graduation
      * Doctoral programs: typically 5 years to complete
        1. Completion of a dissertation
        2. Comprehensive exams that are more extensive than exams taken in a master’s program
6. Explaining the importance of conducting research (01.05, PPT Slide 18)
   1. Ultimately, in I/O psychology, is to save organizations money
   2. Research and its intersection with everyday life
   3. Common sense is often wrong (e.g., earth is flat)
7. Describing how to evaluate I/O psychology research (01.06, PPT Slide 19)
   1. Considerations in conducting research (PPT Slide 19)
      * Ideas, hypotheses, and theories: asking a question, forming a hypothesis, and making a prediction
      * **Example**: Hypothesis example (PPT Slide 20)
      * **Example:** Hypothesis example (PPT Slide 21)
   2. Literature reviews using written sources: journals, bridge publications, trade magazines, magazines, Internet (PPT Slide 22)
      * Has this question been asked before?
   3. Location of the study (PPT Slide 23)
      * Laboratory research: lacks external validity
      * Field research: lacks internal validity
        1. Difficult to obtain informed consent
      * Institutional review boards in universities to ensure ethical treatment of research participants
8. Differentiating various research methods (01.07, PPT Slide 24)
   1. Experiments: independent variable is manipulated, or random assignment of subjects
   2. Quasi-experiments: independent variable is not manipulated, or subjects are not randomly assigned
   3. Archival research
   4. Surveys
   5. Meta-analysis
   6. Independent and dependent variables (PPT Slide 25)
      * Independent variable: variable that is manipulated
      * Experimental group: group of subjects that receives experimental treatment
      * Control group: group of subjects that does not receive the experimental treatment
      * Dependent variable: variable that changes based upon manipulation of independent variable
      * **Example**: Experimental Design (PPT Slide 26)
      * **Example**: Experimental Design (PPT Slide 27)
      * **Activity**: Knowledge-Check (PPT Slide 28-29)
      * **Activity**: Knowledge-Check Answers (PPT Slides 30-31)
   7. Quasi-experiment (PPT Slide 32)
      * Often used to evaluate the results of a new program implemented by an organization
      * Difficult to determine cause-and-effect relationship because of the inability to control intervening variables
        1. **Example**: Child-Care Center (PPT Slides 33-35)
   8. Surveys (PPT Slide 36)
      * Conducted via a variety of methods: mail, personal interviews, phone, email, and online
      * Consider if the intended population can access the medium of survey, and extent to which the person will provide honest and accurate answers
      * Increasing response rates (PPT Slide 37)
        1. Meta-analysis concluding various methods of how to increase response rates
      * Survey design (PPT Slide 38): well-designed survey questions are easy to understand
      * **Example**: Survey Design (PPT Slide 39)
   9. Meta-analysis (PPT Slide 40)
      * Why are meta-analyses better than traditional reviews: summarize all available studies on a topic
      * Effect sizes in meta-analysis (PPT Slide 41)
        1. Correlation (*r*): the relationship between two variables
        2. Difference score (*d*): the difference between two groups
      * Points to keep in mind about meta-analyses (PPT Slide 42)
        1. Back to why meta-analyses are better than traditional reviews: they summarize all available research on a particular topic and carry more weight
        2. Rho, the corrected correlation, corrected for factors that can reduce the size of a correlation
9. Describing how to evaluate I/O psychology research continued (01.06, PPT Slide 43)
   1. Subject samples (PPT Slide 43)
      * Size: large sample size not necessary if experimenter chooses random sample and controls for extraneous variables
      * Students vs. real world
        1. Students: increase experimental rigor and decrease costs
        2. Studies using students may not generalize to the real world
   2. Types of samples and sampling methods (PPT Slide 44)
      * Random: representative as possible of the population; often very difficult
      * Convenience sample: subjects that are easily available (students, online panels, crowdsourcing)
      * Random assignment: each subject in a nonrandom sample is randomly assigned to an experimental condition
      * **Activity**: Knowledge-Check (PPT Slide 45)
      * **Activity**: Knowledge-Check answers (PPT Slide 46)
   3. Running the study (PPT Slide 47)
      * All instructions to subjects should be standardized to ensure unbiased data collection
      * Subjects should be debriefed and given a chance to ask questions about their participation
   4. Analyzing the data (PPT Slide 48)
      * All numbers are different, but are they *significantly* different between the experimental groups?
      * What is the probability that the collected data were the result of chance?
   5. Statistics showing relationships correlation (PPT Slide 49)
      * Correlation does not equal causation
      * Intervening variable often accounts for the relationship between two other variables in a correlation
      * Correlation coefficient is the result of correlational analysis, indicating the strength and direction of the correlation
      * **Example**: Correlation (PPT Slide 50-51)
      * **Example**: Correlation (PPT Slide 52)
   6. **Ethics in I/O Psychology (PPT Slide 53)**
      * Ethical dilemmas
      * Two types
        1. Type A
        2. Type B

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## Discussion Questions

You can assign these questions several ways: in a discussion forum in your LMS; as whole-class discussions in person; or as a partner or group activity in class.

1. **Discussion:** Questions for Review (10 minutes)
   1. What were the important events that shaped the field of I/O psychology?
      1. Answer: student answers will vary depending on which specific events chosen; refer to Brief History of I/O Psychology in textbook
   2. What role will demographic changes play in how we hire and manage employees?
      1. Answer: student answers will vary
   3. If you wanted to pursue a career in I/O psychology, what would you need to do between now and graduation to make this career possible?
      1. Answer: student answers will vary
2. **Career Workshop**: Getting into Graduate School
   1. Career workshop can be used as supplemental in-class discussion.
3. **Applied Case Study**: Conducting Research at the Vancouver International Airport Authority, Canada
   1. Case study can be used as supplemental in-class discussion.
      1. How would you have designed the study to determine the effectiveness of the wellness program?
      2. What outcome measures other than absenteeism and injuries might you use?
      3. What ethical or practical considerations need to be considered when collecting and reporting data in a study such as this one?

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## Additional Activities and Assignments

1. **Workbook Exercise 1.1:** Research Designs
   1. Exercise asks students to determine the type of research design used (experiment, quasi-experiment, survey, correlation, archival, meta-analysis), identify the independent variables and the dependent variables (if any), and identify any problems with the study and offer some suggestions for improvement.
      1. Answer:

|  |  |  |  |
| --- | --- | --- | --- |
| Study | Type | IV | DV |
| A | Correlation | Satisfaction | Performance |
| B | Archival | Sex | Salary |
| C | Quasi-experiment | MNF Game | Days missed |
| D | Survey | None | Child-care center attitudes |
| E | Meta-analysis | Incentives | Performance |
| F | Survey | None | Work attitude |
| G | Archival | Education | Performance |
| H | Experiment | Training | Ability to detect deception |

1. **Workbook Exercise 1.2:** Designing a Study
   1. Exercises asks students to role play as a human resource director and design a study to help them make a decision between two training methods.
      1. Answer: student answers will vary.
2. **Workbook Exercise 1.3:** Reviewing Research Articles
   1. Exercise asks students to read a study and discuss any problems they find with the way in which the study was conducted, the author's conclusions, or the way in which the article was written.
      1. Answer:
         1. Introduction:
            1. Old references: Article was published in 2015 yet most recent cite is 1978
            2. Article stated that other studies “have shown no improvement” but did not cite them
         2. Method:
            1. Small sample size
            2. No description of participant characteristics
            3. Subjective dependent variable
         3. Results:
            1. Significance levels were ignored
            2. Inferred “cause” in a correlational study

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## Additional Resources

### Internet Resources

* + **SIOP’s The General History Virtual Wing.**  
    <https://www.siop.org/About-SIOP/SIOP-Museum/General-History>  
    An excellent source of information on the history of I/O psychology.
  + **SIOP’s Career Center.**  
    <https://www.siop.org/Career-Center/I-O-Career-Paths>An excellent source for students to learn more about career options in I/O psychology.
  + **Graduate Training Programs in I-O Psychology and Related Fields.**  
    <https://www.siop.org/Events-Education/Graduate-Training-Program>A gateway to graduate programs in I/O psychology

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## Appendix

### Generic Rubrics

Providing students with rubrics helps them understand expectations and components of assignments. Rubrics help students become more aware of their learning process and progress, and they improve students’ work through timely and detailed feedback.

Customize these rubrics as you wish. The writing rubric indicates 40 points and the discussion rubric indicates 30 points.

### Standard Writing Rubric

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Meets Requirements** | **Needs Improvement** | **Incomplete** |
| Content | The assignment clearly and comprehensively addresses all questions in the assignment.  15 points | The assignment partially addresses some or all questions in the assignment.  8 points | The assignment does not address the questions in the assignment.  0 points |
| Organization and Clarity | The assignment presents ideas in a clear manner and with strong organizational structure. The assignment includes an appropriate introduction, content, and conclusion. Coverage of facts, arguments, and conclusions are logically related and consistent.  10 points | The assignment presents ideas in a mostly clear manner and with a mostly strong organizational structure. The assignment includes an appropriate introduction, content, and conclusion. Coverage of facts, arguments, and conclusions are mostly logically related and consistent.  7 points | The assignment does not present ideas in a clear manner and with strong organizational structure. The assignment includes an introduction, content, and conclusion, but coverage of facts, arguments, and conclusions are not logically related and consistent.  0 points |
| Research | The assignment is based upon appropriate and adequate academic literature, including peer reviewed journals and other scholarly work.  5 points | The assignment is based upon adequate academic literature but does not include peer reviewed journals and other scholarly work.  3 points | The assignment is not based upon appropriate and adequate academic literature and does not include peer reviewed journals and other scholarly work.  0 points |
| Research | The assignment follows the required citation guidelines.  5 points | The assignment follows some of the required citation guidelines.  3 points | The assignment does not follow the required citation guidelines.  0 points |
| Grammar and Spelling | The assignment has two or fewer grammatical and spelling errors.  5 points | The assignment has three to five grammatical and spelling errors.  3 points | The assignment is incomplete or unintelligible.  0 points |

### Standard Discussion Rubric

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **Meets Requirements** | **Needs Improvement** | **Incomplete** |
| Participation | Submits or participates in discussion by the posted deadlines. Follows all assignment. instructions for initial post and responses.  5 points | Does not participate or submit discussion by the posted deadlines. Does not follow instructions for initial post and responses.  3 points | Does not participate in discussion.  0 points |
| Contribution Quality | Comments stay on task. Comments add value to discussion topic. Comments motivate other students to respond.  20 points | Comments may not stay on task. Comments may not add value to discussion topic. Comments may not motivate other students to respond.  10 points | Does not participate in discussion.  0 points |
| Etiquette | Maintains appropriate language. Offers criticism in a constructive manner. Provides both positive and negative feedback.  5 points | Does not always maintain appropriate language. Offers criticism in an offensive manner. Provides only negative feedback.    3 points | Does not participate in discussion.  0 points |