

Industrial/Organizational (I/O) Psychology

Instructor Manual

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The purpose of this instructor resource module is to help students understand the subdiscipline of industrial/organizational psychology, including its history and potential career paths. It provides the instructor with discussion questions and activities to help execute a successful class.

Learning Objectives

- Relevant APA Learning Objectives (2.0)
 - Describe key concepts, principles, and overarching themes in psychology (1.1)
 - Develop a working knowledge of psychology's content domains (1.2)
 - Describe applications of psychology (1.3)
 - Engage in innovative and integrative thinking and problem solving (2.3)
 - Build and enhance interpersonal relationships (3.2)
 - Adopt values that build community at local, national, and global levels (3.3)
 - Interact effectively with others (4.3)
 - Apply psychological content and skills to career goals (5.1)
 - Refine project-management skills (5.3)
 - Enhance teamwork capacity (5.4)
 - Develop meaningful professional direction for life after graduation (5.5)

Content Specific Learning Objectives

- Define industrial and organizational (I/O) psychology.
- Describe what an I/O psychologist does.
- List the professional associations of I/O psychologists.
- Identify major milestones in the history of I/O psychology.

Abstract

This module provides an introduction to industrial and organizational (I/O) psychology. I/O psychology is an area of psychology that specializes in the scientific study of behavior in organizational settings and the application of psychology to understand work behavior. The U.S. Department of Labor estimates that I/O psychology, as a field, will grow 26% by the year 2018. I/O psychologists typically have advanced degrees such as a Ph.D. or master's degree and may work in academic, consulting, government, military, or private for-profit and not-for-profit organizational settings. Depending on the state in which they work, I/O psychologists may be licensed. They might ask and answer questions such as "What makes people happy at work?" "What motivates employees at work?" "What types of leadership styles result in better performance of employees?" "Who are the best applicants to hire for a job?" One hallmark of I/O psychology is its basis in data and evidence to answer such questions, and I/O psychology is based on the scientist-practitioner model. The key individuals and studies in the history of I/O psychology are addressed in this chapter. Further, professional I/O associations are discussed, as are the key areas of competence developed in I/O master's programs.

Class Design Recommendations

This module can be taught in less than a single class period. Please also refer to the Noba PowerPoint slides that complement this outline.

One Class Period Lesson (50 min – 75 min):

- Introduction
 - Defining I/O psychology

- What does an I/O psychologist do?
 - Research
 - Consulting (internal vs. external)
- Careers in I/O psychology
 - Organizations, government, universities
 - Public, private, for-profit, non-profit, research, etc.
- History of I/O psychology
 - Founding members
 - Important events

Module Outline

Introduction: What is Industrial and Organizational (I/O) Psychology? I/O can be defined as the scientific study of behavior in organizational settings, and the application of psychology to understand work behavior. I/O as a field is helpful because although some fundamental principles of psychology explain how employees behave at work, organizational settings are unique. Thus, we need specialists like I/O psychologists.

What Does an I/O Psychologist Do?

- I/O psychology uses scientific principles to study **organizational phenomena**. Many of those who conduct these studies are located at universities, in psychology or management departments, but there are also many who work in private, government, or military organizations. I/O psychology researchers tend to have a Ph.D.
- I/O psychology is based on the **scientist-practitioner model**. In other words, while the scientist side deals with understanding how and why things happen at work, the practitioner side takes a data-driven approach to apprehend organizational problems and then apply the scientific findings to solve those specific problems.

Careers in I/O psychology

- The U.S. Department of Labor estimates that I/O psychology as a field is expected to grow 26% by the year 2018.
- According to a 2011 membership survey of SIOP, the largest percentage of members were employed in academic institutions, followed by consulting or independent practices, private sector organizations, and public sector organizations.

History of I/O Psychology

- Hugo Munsterberg is considered to be the founding father of I/O Psychology. Frederick
 Taylor was also an important influence, as his ideas about scientific management also
 shaped the field. Lillian Gilbreth was an engineer and I/O psychologist, arguably completing
 the first Ph.D. in I/O psychology. She and her husband, Frank Gilbreth, developed Taylor's
 ideas by conducting time and motion studies, but they also brought more humanism to
 these efforts.
- World War I was a turning point for the field of I/O psychology, as it popularized testing for placement purposes.
- The **Hawthorne Studies**, a series of studies conducted at GE, are considered to be classics in I/O psychology, due to their emphasis on the importance of understanding employee psychology to make sense of behavior in the workplace.
- Since then, thousands of articles have been published on topics relating to I/O psychology, and it is one of the highly influential subdimensions of psychology. I/O psychologists generate scholarly knowledge and play a role in the recruitment, selection, assessment, and development of talent; and design and improvement of the workplace.

Difficult Terms

Hawthorne Effect Scientist-Practitioner Model Work and Organizational Psychology

Lecture Frameworks

Overview: I/O psychology is one of the least known areas of psychology (most people think of therapists when they think of psychologists), which means that the content of this module will likely be completely new to your students. Since their prior knowledge will be limited, you will have to provide a lot of background.

- Warmup Activity—True or False?Get the students warmed up introducing them to some interesting I/O research findings (e.g., tall people make more money than shorter people, even in the same job, such as accounting). Give them a series of statements and have them decide if they are true or false (see below for a complete description of the activity). This is a fun way to introduce students to some of the concepts of I/O psychology.
- **Direct Instruction and Discussion—What is I/O psychology?**Here, you create the foundation of the lecture. What exactly is I/O psychology? What concepts are I/O psychologists interested in? How does I/O differ from other types of psychology that investigate human behavior? These are the basic questions you will want to cover in your introduction to I/O psychology.
- Direct Instruction and Discussion—What does an I/O Psychologist do?Now that you've laid the foundation for what I/O psychology is, you can begin to explain what an I/O psychologist does—from conducting research to applying knowledge directly to organizations and employees (via consulting). Here, we can begin to see the "science-practitioner" model the lesson module talks about. Go ahead and emphasize the balance of this model: without each half of the equation, I/O psychology is nothing. That is, academics must research concepts that are relevant to organizations (otherwise I/O is useless), and practitioners must apply the best practices from the research (otherwise they might not have a positive impact).
- Activity—ThinkàPairàShare: Have students think about each question from the preceding
 discussion and jot down some ideas on a paper or in their notes. Next, have them pair up
 to share their responses. After they have shared their answers with one another, have
 them turn to a different partner and share their answers again. End the activity by having
 the full class discussion of the ideas.
- Direct Instruction and Discussion—Careers in I/O Psychology
 - Beyond the general idea that I/O psychologists either conduct research or serve as consultants, you can talk about the specific jobs they have, including employment in organizations, government agencies, and universities. You can also talk about the different industries and types of employers (public, private, for-profit, non-profit, research, etc.) that use I/O.
 - There is a slide that provides a few basic facts about I/O careers (average salary,

- preparation needed, etc.). If you are running short on time, you can cut this out.
- The essential goal of this section is to highlight the range of settings I/O psychologists work in.

Activity—Thinking like an I/O psychologist

- The goal of this activity is to help students get into the mindset of an I/O psychologist: how does an I/O psychologist think about work? We know that work life isn't entirely about money, so what else is it about? By looking into one specific job (professor), students can get a more clear idea of how I/O psychologists understand employees and organizations.
- See the activities/demonstration section for a detailed description of this activity.

Direct Instruction—History of I/O psychology

- Finally, you can talk about some of the history behind I/O psychology: Where did it come from? What has influenced the field? You can talk about the founding members and important historical events that have shaped the field.
- The goal here is to show that I/O psychology doesn't exist in a vacuum; it is a field that
 responds to environmental challenges (e.g., soldiers' deployment during WWI), which
 makes it an increasingly important part of organizational life (and is why it has one of
 the highest-rated employment/growth potentials, according to the Department of
 Labor).

Activity—Bad Designs

- The goal of this activity is to show students some examples of "human-factors" engineering (ergonomics) that a lot of the founders concentrated on. Though human-factors specialists only comprise a small percentage of current I/O psychologists, it is an important part of the I/O history!
- This activity has students looking at different products that have "bad designs" (e.g., doors that have handles but need to be pushed to open; most people reach for the handles). This concept is important for certain jobs (e.g., if the dials and knobs aren't intuitive for pilots, they tend to make more errors, which can result in life-threatening but preventable mistakes).
- See the activities/demonstration section for a detailed description of this activity.

- Wrap-Up:To bring the lesson to a close, you can discuss as a class some more complex thoughts and considerations. Some example questions are:
 - How does I/O psychology relate to you and your future career?
 - How does the current economy and workforce influence I/O psychology?
 - What kinds of trends do you think current I/O psychologists face (e.g., technology, aging workforce, globalization, etc.)?
- Classroom Assessment Technique (CAT)—Muddiest Point
 - The Muddiest Point is one of the simplest CATs to help informally assess where students
 are having difficulties. The technique consists of asking students to jot down a quick
 response to one question: "What was the muddiest point in the lecture or discussion?"
 - Collect their responses and you'll quickly find out which concepts are giving your students the most trouble. After you identify problem concepts (i.e., "muddy"), you can then clarify them in the next class.

Activities & Demonstrations

Learning About I/O Psychology—True or False? This class demo should be completed at the beginning of class. It can be done as a whole class or individually.

- Time: 5-10 minutes, depending on how many statements you include and how long you talk about each statement
- Materials: Depending on how you record responses, you may need clickers, or pen and paper, or nothing at all
- Directions:
 - A statement will appear on the slide and students will have to decide if the statement is true or false. (You can use clickers, have students raise their hands, write it down, etc. One fun way to do this is to have students stand up and actually pick a side. They may be hesitant at first, but just encourage them and don't let anyone stand in the middle!).
 - 2. Once they have picked a side, you can ask them why they think the statement is true or

false, and then talk about what the research actually says.

- Sample Statements:
 - People who are taller make more money (even for jobs that have nothing to do with height, such as accounting, teaching, etc.).
 - *True!* Judge and Cable (2004) found that physical height is significantly related to measures of social esteem, leader emergence, and performance. These relationships were true for men AND women. Finally, height is positively related to income after controlling for sex, age, and weight.
 - If I was paid more, I would work harder.
 - Mostly false. Though financial incentives tend to initially attract people to jobs (we all like to make money!), they tend to be ineffective in the long run. Financial incentives such as raises, bonuses, and promotions only motivate people for about 3-6 months. So, as I/O psychologists, we have to find another way!
 - People who are outgoing make better leaders.
 - False! Though being extraverted is related to emerging as a leader, it doesn't actually correlate with effectiveness. Conversely, just because someone is introverted, does not mean that they won't be an effective leader (it just may take a little more time for others to see them as leaders). In fact, sometimes someone who is outgoing can push a group into making a bad decision (because they are outgoing enough to "lead" the group, but aren't necessarily knowledgeable or qualified to make appropriate decisions/suggestions).
 - I/O psychologists want to discriminate between job applicants/employees.
 - *True!* An I/O psychologist's entire job is to discriminate between people: Who will be the best person for the job? Who is the highest performer? Who should get a promotion/raise? The key to this is that they want to FAIRLY discriminate between employees. (In this context, describe discrimination as the same as differentiation). However, they don't want to unfairly discriminate between employees. For example, I/O psychologists want to find the highest performers and give them a raise (FAIR discrimination), instead of giving raises based on race, gender, religion, etc. (UNFAIR discrimination). This is a really important distinction!

- Personality tests predict employee performance better than intelligence tests.
 - *False!* Although personality tests do tell us things we are interested in (e.g., is this employee likely to steal from the organization, or will they get along with their coworkers?), the BEST predictor of an employee's job performance is intelligence.

Psychology Applied—Thinking like an I/O Psychologist: This activity is best completed after your discussion of the careers available in I/O psychology. Students apply what they have learned through class lecture/content.

- Time: 5-10 minutes, depending on how many facets you discuss and the depth of discussion
- Materials: none (unless you want them to write it down instead of discuss it)
- Directions: Have students analyze the job of a professor through the eyes of an I/O psychologist. To help with this process, you can give them the following prompt

1. What does a professor DO?

- Here, get them thinking about the complexities of being a professor. Most professors have teaching, research, and university service obligations. (As a side benefit, you'll give students insights into the complex jobs of most professors. Students often don't realize that professors do things other things than lecture and give tests!)
- Some specific duties might include: preparing and delivering lectures; creating assignments and tests; grading papers, tests and assignments; conducting research; analyzing data; writing reports; attending conferences; mentoring graduate and undergraduate students (advising, reading theses/dissertations, etc.); overseeing TAs and RAs; acting as peer reviewers for journals and conference submissions; serving as faculty advisors for organizations; designing curriculum; serving on various committees; etc. The list goes on!

2. How would you analyze professors' job performance?

Hopefully, you get a complicated response (because job performance is complicated; it's not just a straightforward assessment). Students should take into account the different areas of performance (teaching vs. research vs. service). How should we assess teaching performance? We know from the research that relying solely on student evaluations may not be effective, so what are some other options? How do we evaluate

a professor's research contribution? Should we look at quantity or quality? If we decide to look at quality, how do we know what quality is and isn't? What about service? How do measure a professor's service to the department, university, and community?

- 3. What motivates professors? How might you increase their motivation?
 - Most students are aware enough to know that most college professors don't make a lot of money. (Most could make more money working in the industry). So, if professors aren't in it for money, what are they working for? What motivates them? What might the university do to keep them motivated and productive?
- 4. What characteristics might predict whether or not someone is a good professor?
 - Think of it this way: if we wanted to select the BEST professor, what would we look for?
 Intelligence? Personality traits? Work habits?
- 5. How does the university influence the performance of professors?
 - This should get students thinking about the contextual factors associated with professors' job performance. Employees don't exist in a vacuum, and their work environment certainly influences what they're capable of doing. For example, what if the university doesn't have money for research? The result might be that the professor doesn't have the participants, equipment, statistical software, etc. to effectively do the job. Or, what if the university demands an unreasonable amount of publications each year? Maybe then the professor doesn't have adequate time for service or teaching (so those ratings might be low).

Psychology Applied—Bad Designs: This activity is best completed after the discussion on the history of I/O psychology, specifically after talking about the early influences and the focus on human factors and efficiency. Use the bad designs website (see below) to illustrate examples of human-factors engineering. Students talk about what they've learned as a classwide discussion or in small groups.

- Time: 5-10 minutes, depending on the depth of explanation and number of examples used
- Materials: none (unless you want students to write their answers down instead of discuss)
- Directions:
- 1. Pull up the bad designs website (www.baddesigns.com) and browse some of the products.

(You might want to do this ahead of time, so you can pick out 3-5 of the most interesting/funny examples).

- 2. Based on the examples you select, have the class talk about similar design issues they have experienced. You might use this discussion to illustrate the types of work early I/O psychologists investigated. You could also talk about more recent iterations of this type of research, such as I/O psychologists' help in designing airplane cockpits so pilots are able to more easily navigate the complex controls.
- 3. You might talk about numbers of deaths associated with certain products' usage—specifically, that most products are designed with right-handed people in mind, which leads to several deaths of left-handed people each year (because they used an improperly designed product). Though it's sad, it is a good example of the importance and relevance of the work of early I/O psychologists. See here for an easy-to-read article that references some of the research done on left vs. right handedness: http://www.nytimes.com/1991-/04/04/us/being-left-ha...

Additional Activities

Casper, W. J., Champoux, J. E., Watt, J. D., Bachiochi, P. D., Schleicher, D. J., & Bordeaux, C. (2003). Feature film as a resource in teaching I-O psychology. *The Industrial-Organizational Psychologist*, *41*(1), 83-95.

• Films are often useful for illustrating course content, by providing visualization of concepts and theory as well as specific cultural focuses, while at the same time offering important entertainment value that can enhance undergraduate and graduate instruction. Films can be easily adapted for classroom use to increase student involvement, promote critical thinking and analytical skills, and aid recall of course content. (Film-based assignments also have the advantage of being generally enjoyable experiences for students—which can positively impact teaching evaluations.)

Wann, D. L. (1994). Developing fantasy organizations in industrial/organizational psychology courses. *Teaching of Psychology*, *21*, 177-179. doi:10.1207/s15328023top2103_14

• This article describes a project in which 52 undergraduates in an I/O psychology course were divided into groups of 6 to construct fantasy organizations. Lecture material was applied to the mock organizations throughout the semester. Students completed a

questionnaire after the project, showing that they believed it facilitated their comprehension of, and interest in, the course material.

Zinn, T. E. & Smiley, W. F. (2011). Activities for engagement in an Industrial/Organizational psychology course. In R. L. Miller, E. Balcetis, S. R. Burns, D. B. Daniel, B. K. Saville, & W. D. Woody (Eds.), Promoting student engagement (Vol. 2, pp. 9-14). Retrieved from the Society for the Teaching of Psychology website: http://teachpsych.org/ebooks/pse2011/index.php

• I/O psychology is an applied course; by incorporating activities into the course, students can more readily see how we apply psychological science to organizations. Here, students learn about a job they are interested in and see practitioners apply the class concepts (e. g., performance appraisals). Furthermore, many students have indicated that the activities have helped them in jobs and graduate school by providing practical situations to apply their knowledge. The authors provide a series of activities to use in an I/O course, including activities focusing on (a) motivation, (b) analyzing the job of a psychology professor (including criterion-development, performance appraisal, predictors), and (c) constructing a final exam. The authors also provide an annotated bibliography for I/O instructors hoping to encourage active participation by their students.

Discussions Points

- 1. How does I/O psychology relate to you and your future career?
 - One of the APA's learning goals is to help students think about and prepare for their future careers. Though few students may be aware of or interested in I/O psychology as their career of choice, it's still a helpful content area because it can help students understand issues related to their career and organization life. You could have students talk about their career plans, what I/O psychologists might think about their job, etc. The goal is to get students thinking critically about their future profession.
- 2. How do you think the job context (public, private, non-profit, research, consulting, etc.) influences the work of an I/O psychologist?
 - I/O psychologists work within a complex framework that is influenced by many contextual factors. The goal of this question is not only to reiterate the content (what an I/O psychologist does), but also to get students thinking critically about external factors that might influence an individual's job.
- 3. How does the current economy and workforce influence the field of I/O psychology? What

kinds of trends do you think current I/O psychologists face (e.g., technology, aging workforce, globalization, etc.)?

- The face of employment is changing—from globalization to the aging workforce (people are living longer, which means more older workers). Though students might not be interested in these trends per se, they (the trends) will undoubtedly affect their employment. The days of working at a single organization for your entire career are long gone; what implications does this hold for I/O psychologists and the workforce?
- Again, the goal here is to get students to think critically about complex, interlaced factors, and to also get them thinking about the influences on their future employment.

Outside Resources

Careers: Occupational information via O*Net\'s database containing information on hundreds of standardized and occupation-specific descriptors http://www.onetonline.org/

Organization: Society for Industrial/Organizational Psychology (SIOP) http://www.siop.org

Organization: Alliance for Organizational Psychology (AOP) http://www.allianceorgpsych.org

Organization: American Psychological Association (APA) http://www.apa.org

Organization: Association for Psychological Science (APS) http://www.psychologicalscience.org/

Organization: European Association of Work and Organizational Psychology (EAWOP) http://www.eawop.org

Organization: International Association for Applied Psychology (IAAP) http://www.iaapsy.org/division1/

Training: For more about graduate training programs in I/O psychology and related fields http://www.siop.org/gtp/

Video: An introduction to I/O Psychology produced by the Society for Industrial and Organizational Psychology.

https://www.youtube.com/watch?v=oG5ew9rhkBg

Evidence-Based Teaching

Maynard, D. C., Bachiochi, P. D., & Luna, A. C. (2002). An evaluation of industrial/organizational psychology teaching modules for use in introductory psychology. *Teaching of Psychology, 29*, 39-43. doi:http://dx.doi.org/10.1207/S15328023TOP2901_10

• I/O psychology has typically been neglected in introductory psychology textbooks and courses. The Society for Industrial and Organizational Psychology (SIOP) has developed a series of teaching modules for introducing I/O psychology. The authors evaluated 4 modules for student learning/intentions and for student/instructor reactions. Overall, student knowledge of I/O concepts increased after the presentation of the modules. Additionally, students were more likely to want to take a course in I/O psychology after the presentation. Finally, students found the presentations interesting and easy to understand.

Shoenfelt, E. L., Stone, N. J., & Kottke, J. L. (2015). Industrial–organizational and human factors graduate program admission: Information for undergraduate advisors. *Teaching of Psychology*, *42*, 79-82. doi:http://dx.doi.org/10.1177/0098628314562683

• Many psychology departments do not have I/O or human-factors (HF) faculty members. That being the case, potential I/O and HF graduate students may miss career opportunities because faculty advisors are unfamiliar with the disciplines and their graduate programs. To assist advisors, this article highlights the content of I/O and HF disciplines, presents tips on how to advise undergraduates for admission to I/O and HF graduate programs, provides sources of I/O and HF information, suggests employability options in I/O and HF, and offers an advising brochure that is available upon request. A wide variety of career options exist in both I/O and HF. Advisors assisting students in evaluating potential careers and identifying graduate programs should find this information useful.

Carducci, B. J., Deeds, W. C., Jones, J. W., Moretti, D. M., Reed, J. G., Saal, F. E., & Wheat, J. E. (1987). Preparing undergraduate psychology students for careers in business. *Teaching of*

Psychology, 14, 16-20. doi:10.1207/s15328023top1401_3

Identifies important skills for psychologists working in business—tests and measurements, research methods and design, statistics and statistical computer packages, psychological report writing, and clinical-counseling skills, including effective listening and interviewing skills. Educational programs and curricular strategies for acquiring these skills are presented. Areas of the interrelationship between the business world and psychology that are presented here include I/O psychology, human resources administration, and organizational training (training and development). The focus is on several methods for helping psychology educators and students become more aware of how psychology majors can increase their occupational alternatives.

Links to ToPIX Materials

Activities, Demonstrations, or Handouts

http://topix.teachpsych.org/w/page/24385506/IO%20in%20the%20Classroom

Current Events or News

http://topix.teachpsych.org/w/page/36862419/Industrial%20Psychology%20in%20the%20News

Videos/Audio

http://topix.teachpsych.org/w/page/19981010/IO%20Videos

Teaching Topics

Teaching The Most Important Course

https://nobaproject.com/documents/1_Teaching_The_Most_Important_Course.pdf

Content Coverage

https://nobaproject.com/documents/2_Content_Coverage.pdf

Motivating Students

https://nobaproject.com/documents/3_Motivating_Students_Tips.pdf

Engaging Large Classes

https://nobaproject.com/documents/4_Engaging_Large_Classes.pdf

Assessment Learning

https://nobaproject.com/documents/5_Assessment_Learning.pdf

Teaching Biological Psychology

https://nobaproject.com/documents/6_Teaching_Bio_Psych.pdf

PowerPoint Presentation

This module has an associated PowerPoint presentation. Download it at https://nobaproject.com//images/shared/supplement_editions/000/000/177/Industrial/Organizational%20(I/O)%20Psychology.ppt?1475878836.

About Noba

The Diener Education Fund (DEF) is a non-profit organization founded with the mission of reinventing higher education to serve the changing needs of students and professors. The initial focus of the DEF is on making information, especially of the type found in textbooks, widely available to people of all backgrounds. This mission is embodied in the Noba project.

Noba is an open and free online platform that provides high-quality, flexibly structured textbooks and educational materials. The goals of Noba are three-fold:

- To reduce financial burden on students by providing access to free educational content
- To provide instructors with a platform to customize educational content to better suit their curriculum
- To present material written by a collection of experts and authorities in the field

The Diener Education Fund is co-founded by Drs. Ed and Carol Diener. Ed is the Joseph Smiley Distinguished Professor of Psychology (Emeritus) at the University of Illinois. Carol Diener is the former director of the Mental Health Worker and the Juvenile Justice Programs at the University of Illinois. Both Ed and Carol are award- winning university teachers.

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R. Biswas-Diener & E. Diener (Eds), Noba Textbook Series: Psychology. Champaign, IL: DEF Publishers. Retrieved from http://noba.to/4q658bnm









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