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RUNNING HEAD: SIOP Guidelines for Education and Training

The Society for Industrial and Organizational Psychology's Guidelines for Education and Training: An Executive Summary of the 2016/2017 Revision

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Abstract

The Society for Industrial and Organizational Psychology (SIOP, Division 14 of the American Psychological Association [APA]) maintains Guidelines for Education and Training to provide guidance for the training of industrial-organizational (I-O) psychologists. The 2016/2017 revision combines separate documents for master's- and doctoral-level training into one document, as the competencies required for each degree are not very different. Instead, the degrees differ in breadth and depth. In this paper, we briefly review the revision process and highlight the updates made in the latest version of the Guidelines.

The Society for Industrial and Organizational Psychology's Guidelines for Education and Training: An Executive Summary of the 2016/2017 Revision

To provide guidance for the training of industrial-organizational (I-O) psychologists, the Society for Industrial and Organizational Psychology (SIOP, Division 14 of the American Psychological Association [APA]) maintains Guidelines for Education and Training. These Guidelines prescribe recommended areas of competence, including general knowledge and skills, core content, and related areas of competence. They are intended to aid the design of graduate programs in I-O psychology and inform prospective students of the nature of I-O psychology training and criteria for evaluating training (Society for Industrial and Organizational Psychology, 2016/2017). The Guidelines were revised by SIOP's Education and Training Committee with guidance from SIOP membership and approved by the SIOP Executive Board in April 2016 before being reviewed by the APA divisions and committees, including the Board of Educational Affairs. The revision was approved by the APA in August 2017.[1]

Historical Background and Overview of the Process

SIOP originally published the Guidelines for Education and Training at the Doctoral Level in 1973–1974, followed by a revision in 1985. In 1999, two separate Education and Training Guideline documents were published: one for master's-level training and one for doctoral-level training. The 2016/2017 revision combines the two sets of Guidelines into one document.

[1] The 2016/2017 Guidelines are available on the SIOP website: http://www.siop.org/ETguidelines.aspx

SIOP's Education and Training Committee is comprised of academicians and practitioners with master's and Ph.D. degrees in I-O psychology and related fields. The committee is organized into subcommittees dedicated to specific concentrations. One of these is the Guidelines Subcommittee, whose primary responsibility is to review the Guidelines, gather data on suggestions for revisions, propose changes, and see the revised Guidelines through the SIOP and APA approval processes. Updates regarding the status of the Guidelines revision were shared periodically as informational updates in SIOP's publications *The Industrial-Organizational Psychologist* and *Newsbriefs,* as well as the Executive Board Special Sessions and the Program Directors Meeting at SIOP's annual conferences.

The SIOP Guidelines review process recurs in order to meet the Association Rule 30-8.3 prescription of a 10-year interval. The Education and Training Committee began the process of revising the now-approved 2016/2017 Guidelines by gathering historical data on the process from those previously involved, soliciting ideas from current committee members and their colleagues, and administering a survey to I-O psychology graduate program directors (Payne, Botsford Morgan, & Allen, 2015). Respondents (N = 89) rated the importance of each of the 26 competencies included in the 1999 doctoral-level Guidelines—and a few new competencies suggested by the committee—on a 5-point Likert scale (1 = *optional/not necessary* to 5 = *essential*). Results indicated a similar rank order of competencies for master's and Ph.D. degrees, which provided empirical support for the decision to consolidate the guidelines for master's and doctoral education and training into a single set of Guidelines. Competencies that ranked highly for both master's and doctoral education included research methods; statistical methods and data analysis; personnel recruitment, selection, and placement; and ethical, legal, and professional contexts of I-O psychology. Program directors were also given an opportunity

to suggest changes to proposed revisions of each of the 26 competency descriptions. These suggestions were taken into consideration when finalizing these descriptions, and the content of the newly proposed competencies was incorporated into the current set.

Scope of the Guidelines

The Guidelines were revised to be compliant with APA's guidelines for standards and guidelines related to education and training in psychology (American Psychological Association, Board of Educational Affairs, 2004). The Guidelines document begins with a discussion of the purpose of the Guidelines and their history. The 26 competencies, grouped into general, core, and related categories, are also described in detail. In terms of general knowledge and skills, these are competencies on which I-O psychologists at both the master's and doctoral levels should receive extensive training. Core content competencies are more topical in nature, but the majority of I-O psychologists at both the master's and doctoral levels should be familiar with them and doctoral training should provide greater depth of knowledge and experience. Related competencies fall outside the core areas of I-O psychology but may be still be relevant. Seven means of training I-O psychologists in these competencies—including formal coursework and on-the-job training—are matched to the competencies in Table 3 of the document. A template for curriculum mapping is available (at siop.org) for assessing the alignment of a program with the Guidelines. Also, a comparison of the revised Guidelines to the results of a career study conducted by SIOP simultaneously appear in Payne and Oliver (2016).

Following the organization and order in which the competencies are presented in the revision, we briefly describe the 26 competencies included in the Guidelines. Longer descriptions of each competency are available in the Guidelines.

General Knowledge and Skills

Ethical, Legal, Diversity, and International Issues was formerly titled "Ethical, Legal, and Professional Contexts of I-O Psychology." This competency focuses on the requirement that I-O psychologists behave in accordance with ethical guidelines and the law. This behavior includes appropriate conduct in situations in which psychologists conduct research with human participants and provide consulting services. The revised guidelines now include a definition of diversity and a discussion of contexts in which I-O psychologists need to exercise awareness and sensitivity to diversity issues, working with diverse audiences, and matters of human rights and wellbeing.

Fields of Psychology acknowledges that I-O psychologists incorporate aspects of many subdisciplines of psychology in their work, and must therefore maintain sufficiently deep familiarity with these subdisciplines. In particular, I-O psychology work frequently incorporates aspects of social psychology, psychometrics, cognition, and personality. As noted in the Guidelines, fields of work may evolve such that they become more or less relevant to the practice and study of I-O psychology.

History and Systems of Psychology reminds I-O psychologists of their core discipline. When history and systems of psychology are part of psychologists' education, common roots shared by specialties within psychology (e.g., behaviorism, the views of Spearman) are reinforced and communication across specializations is facilitated. As noted in the Guidelines, a historical appreciation for the broader discipline of psychology underscores the value of theoretical approaches to psychology.

Professional Skills (Communication, Business/Research Proposal Development, Consulting, & Project-Management Skills) was formerly titled "Consulting and Business Skills" and now explicitly calls out activities such as proposal writing, communication, and project management. This competency subsumes communication, including technology use, writing, and presenting; business writing and proposal development; problem solving and decision-making; and project-management skills including budgeting, scheduling, delegating, and managing others.

The **Research Methods** competency area describes the scientific method and related topics such as philosophy of science, inductive and deductive reasoning, research synthesis, research design, and the nature and definition of constructs. It also attends to operational topics, including protection of human research participants, manipulation of variables, measurement, causality, lab and field studies, and the inferences we can draw from these studies. The Guidelines note that having a foundation in research methods enables I-O psychologists to be successful researchers and consumers of research.

Statistical Methods/Data Analysis refers to quantitative and qualitative data analysis, including descriptive and inferential statistical techniques and parametric and nonparametric analyses. The 2016/2017 revision added qualitative research to this competency, which has historically emphasized quantitative approaches. Important topics include estimates of central tendency and variability, differences between means and proportions, analyses of variance, correlation, and regression. The 2016/2017 revision also added multilevel modeling as an example of a more advanced technique that is relevant to organizational studies. Generally speaking, I-O psychologists should be familiar with a major statistical software package and be able to discuss research findings with a lay audience.

Core Content

Attitude Theory, Measurement, and Change is a general area of importance for I-O psychologists given their relevance to the experience of work, non-work, intentions, and behavior. Major topics include satisfaction, commitment, and job involvement. In addition, attitude theory helps form an understanding of how attitudes change and relate to behavior.

Career Development relates to the processes and factors that impact individuals' vocational interests and careers, occupations, and organization choices. Included in this domain are models of factors impacting education and training; career stage considerations, such as midcareer plateaus and retirement; and general workforce trends.

Criterion Theory and Development is central to the study and practice of I-O psychology. Criteria are the standards used to evaluate the success of organizational processes and interventions, including human resource planning, organizational development, selection, training, leadership, and organization design. Common examples include performance of job-relevant tasks or extra-role tasks, lateness to work, absenteeism, and worker health. Criteria can be assessed at the individual, workgroup, or organizational level of analysis.

The formerly titled competency "Small Group Theory and Team Processes" was simplified to **Groups and Teams** in the 2016/2017 revision. Given that behavior in work organizations is conducted in the presence of others, understanding research findings on groups and teams is critical for I-O psychologists. Consistent with the **Fields of Psychology** competency, the literature on groups and teams draws from other fields of work, including social psychology, organizational behavior, and sociology. The 2016/2017 revision of the Guidelines

adds several modern groups and teams topics, including virtual teams, cross-cultural teams, and multi-team systems.

Human Performance was separated from the **Human Factors** competency in the 2016/2017 Guidelines, and the **Human Factors** competency was moved to the category "Related Areas of Competence." **Human Performance** focuses on studying both the capabilities and limitations of skilled human behavior, with an emphasis on variation across contexts defined by tools, tasks, and environments. Additionally, this domain includes factors that affect human performance, such as individual differences in cognitive ability and temperament, disabilities, and training variables.

Individual Assessment involves the assessment and interpretation of characteristics that distinguish individuals in terms of work-related purposes. Typically, these characteristics include ability, personality, aptitude, and interests. I-O psychologists apply individual assessment in selection-related processes such as hiring, promotion, and placement. We also use individual assessment practices for developmental purposes, including career planning, competency building, and employee counseling. Techniques often required for the conduct of individual assessment include individual testing and interviewing.

As foreshadowed by the emphasis of **Criterion Theory and Development**, **Human Performance**, and **Individual Assessment**, much of I-O psychology centers on the definition, measurement, and assessment of **Individual Differences**. The study and practice of I-O psychology requires accurate assessments of psychological traits and, by extension, a foundation in classical and modern measurement theories. For example, practices for evaluating item and scale bias, developing minimum-competence assessments and mastery tests, and establishing test

equivalence can be addressed by classical test theory, item response theory, psychometrics, and other approaches. Relatedly, **Job Evaluation and Compensation** is the domain of determining the appropriate compensation for skills, tasks, or jobs based on sound job, task, or work analyses. It is based on job/task/work analysis but also takes into account market conditions and individuals' perceptions of fairness.

The **Job/Task/Work Analysis/Competency Modeling and Classification** competency title was elaborated from the former "Job/Task Analysis and Classification." This competency refers to techniques used to systematically describe what is involved in performing a job, task, or work and the individual characteristics needed to form the job, task, or work. This approach serves as the foundation for many I-O psychology applications, including designing employee selection and training programs and establishing performance criteria or career paths. The "individual characteristics" include knowledge, skills, and abilities and personality variables. Additionally, "classification" in this context refers to the design of taxonomies of jobs, such that similar jobs are grouped together.

Judgment and Decision-Making focuses on theories describing the processes by which individuals and groups make decisions, draw conclusions, and evaluate objects. Decision theory and cognitive frameworks such as heuristics and biases are applied to understand inferential procedures used by individuals. Judgment and decision-making are important for the study and practice of I-O psychology since decision-making and judgment processes are ubiquitous in the responsibilities of managers, marketers, policy planners, and others in the course of their work. Related fields include cognitive psychology and behavioral economics.

Leadership and Management theories and research focus on characteristics of leaders, leader–member interactions, and leader behaviors. Discussions of leadership and management can be held at various levels inside and outside organizations, with macro processes illustrating how leaders impact organizational values and change, for example. Micro processes depicting the day-to-day exchanges between leaders and team members might include assignment of tasks, evaluation of performance, and counseling for improvement. As in the **Criterion Theory and Development** competency, an important consideration is defining measures of effective performance.

Occupational Health and Safety was retitled from "Health and Stress in Organizations." The competency highlights the influence that organizations have on employee health, safety, and general wellbeing. Overall, this domain focuses on the interactions between individual activity and work conditions, with particular interest in hazardous work conditions. Revisions to the 2016/2017 Guidelines include the addition of mistreatment of workers as a source of stress, and reference to the more general "work–nonwork pressures" rather than "work–family" pressures. In addition to considerations such as Occupational Safety and Health Administration (OSHA) regulations, the revised Guidelines mention the Americans with Disabilities Act (ADA). Finally, worker wellbeing in the context of developing countries is a noted topic of concern.

Organization Development relates to improving the effectiveness of individuals, groups, and organizations. Change strategies may be targeted toward organizational systems through survey feedback, flexible work hours, or structural changes, or toward groups through team building or conflict management. They may also be aimed at individuals, through training, career planning, or tasks, or through job redesign or management by objectives. Generally,

performance of this competency requires that I-O psychologists diagnose problems, design interventions, and evaluate implementation.

Organization Theory refers to classical and contemporary theories of organizations, organizational structure, organizational design, organizational culture and climate, and other frameworks that describe the structures, functions, and processes of organizations. Accordingly, multilevel analysis techniques, as mentioned in the **Statistical Methods/Data Analysis** competency, afford I-O psychologists approaches well suited to accounting for levels of analysis in the study of nested constructs.

Performance Appraisal/Management was formerly titled "Performance Appraisal and Feedback" and is sometimes referred to as "Talent Management" in practice. It focuses on the measurement and evaluation of individuals' work performance and prescriptions for performance improvement. Related topics include rating scale construction, rater training, and multisource feedback.

Personnel Recruitment, Selection, and Placement are firmly grounded in **Job/Task/Work Analysis/Competency Modeling** as it aligns jobs with required knowledge, skills, and abilities. **Recruitment, Selection, and Placement** matches this information with the needs and preferences of prospective or current employees. Theories and research informing this domain include human abilities, test theory and development, criterion development and measurement, decision-theory models of selection and placement, legal and ethical considerations, and individual assessment.

The **Training: Theory, Delivery, Program Design, and Evaluation** competency, as indicated by the title, focuses on theory and techniques for designing, delivering, and evaluating

instructional programs. Accordingly, I-O psychologists should be familiar with theories of learning such as those developed in cognitive psychology, instructional design, or educational contexts. I-O psychologists should also be acquainted with means of training and approaches such as computer-assisted instruction and simulations. As noted in the Guidelines document, means of training include, but are not limited to, formal coursework, independent study, supervised research, on-the-job training, and observation. An additional point made by the 2016/2017 Guidelines is that in some I-O work, I-O psychologists will be called upon to deliver training and teach others.

Work Motivation refers to how characteristics of workers and the work context influence the direction, strength, and persistence of work-related behaviors in organizations. Notably, work motivation is considered independent of individual abilities. One change in the 2016/2017 Guidelines is the addition of self-regulation as an example of general strategy for work motivation. Self-regulation refers to management of voluntary actions (Karoly, 1993) and is closely tied to social cognitive theory, which identifies self-regulatory mechanisms such as self-monitoring (Bandura, 1991). **Work Motivation** is generally a key content domain for I-O psychologists as it applies basic psychological theories to influence effort directed toward work. Examples include goal setting, job design, and incentive system design.

Related Areas of Competence

Related areas of competence are noted in the Guidelines to maintain brief coverage of competencies previously included that are more tangentially related to the study and practice of I-O psychology. The 2016/2017 Guidelines specify two related areas: **Consumer Behavior** and **Human Factors**. **Consumer Behavior** falls under the domain of Consumer Psychology and

Division 21 of APA, the Society for Consumer Psychology. Topics explored include individuals' reactions to consumer products, buying habits, brand preferences, and evaluation of communications such as advertisements and communications. Likewise, the **Human Factors** domain falls under the purview of Division 21 of APA, Applied Experimental and Engineering Psychology. It focuses on applying psychological theories and practices to the creation of safer, more effective, and more reliable systems. Whereas there are overlapping areas of interest between **Human Factors** and I-O psychology, specifically **Motivation and Human Performance**, they are distinct disciplines stewarded by separate APA divisions.

Conclusion

SIOP's Guidelines for Education and Training, approved by APA, will undergo the review and revision process again in preparation for the 2027 expiration of the Guidelines. Reviews provide the opportunity to make changes that reflect growth of the field and how this growth impacts the competencies needed for the study and practice of I-O psychology. As the nature of who, what, where, when, and how work is conducted changes, so does the discipline of I-O psychology. Education and Training documents need to align with these changes and reflect the latest in terms of both science and practice.

To illustrate the previous point, the 2016/2017 revision reflects changes in the world of work that necessitated adaptation and adjustment of training topics and methods. The revision adds some advances in methodological and statistical techniques, including multilevel modeling and computer adaptive tests. The Guidelines also acknowledge that technology may impact the interface between work and nonwork. Examples include communication technologies and their influence on work conducted remotely by individuals and by virtual teams. Changes in the legal environment are reflected in the personnel selection, discrimination, and occupational safety

competencies. Social trends like the increased attention to diversity and global considerations were emphasized throughout the revision. Finally, general trends in education and training should reflect the latest approaches. The revision added two more means of training: involvement in funded research and collaborative research. We anticipate further changes and adjustments when reviewing the guidelines for the 2027 revision.

The revised Guidelines for Education and Training in I-O Psychology reveal the growth of the discipline in the last 17 years. As the work environment adopts new technologies, global pressures create the need for new regulations. Therefore, as workers interact in the ever-changing world of work, guidelines for education and training should reflect these changes. We hope the Guidelines will continue to serve as a useful tool to current and future I-O psychologists.

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