

Consulting and Business Skills in Industrial/Organizational Psychology Graduate Education

Report to the SIOP Executive Board From the Education and Training Committee's Sub-Committee on Business and Consulting Skills in I-O Graduate Education

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EXECUTIVE SUMMARY

Industrial/Organizational Psychology is a scientist-practitioner discipline. Consistent with this, SIOP membership is fairly evenly split between those primarily engaged in academic work and those engaged primarily in applied settings. Although we train graduates who are experts in both I/O psychology content and rigorous methods, there is concern that the training lacks attention to consulting and business skills. That is, our graduates' expertise may be underleveraged, due in part to relative weaknesses in certain workplace skills such as business communication (e.g., business writing and presentation) and business development (e.g., packaging ideas and practical problem-solving).

In 1999, SIOP updated its graduate training guidelines to reflect the importance of consulting and business skills to practitioners in I/O psychology and in 2007, SIOP's Executive Board directed the Education and Training Committee to explore this issue. In 2008, a pilot study was conducted, with results reported at the 2009 SIOP Convention. In 2009, the Education and Training Committee conducted a full-scale survey to gather data regarding current practices and expectations for developing consulting and business skills in graduate I/O programs. Perspectives were gathered from four key stakeholder groups: current faculty, current students, recent graduates, and the practitioners who hire them. Two surveys were conducted, examining opportunities for developing consulting and business skills, as well as employer expectations and new graduate expertise levels. Four hundred nineteen (419) SIOP members responded in total. Response rates were: Faculty, 15% (44); Students, 13% (173); Employers, 18% (85); and Recent Graduates, 23% (117).

Survey results revealed several areas of misalignment. For example, graduate students desire, and recent graduates believe they should have, business development skills. However, the employers who responded to this survey did not have particularly high expectations for new graduates' competence in this area. Although faculty respondents to the survey were less likely than students to agree that their programs should provide these skills, they still believe that programs should be doing a better job than they currently are. As another example, faculty with consulting practices often think that giving students "real-world" data to analyze and summarize creates a meaningful opportunity to develop practitioner skills. Students do not agree.

This report reviews the findings of the study and outlines a set of recommendations for students and new grads, for faculty and program directors, and for SIOP as a professional society.

INTRODUCTION

The mission of the Society for Industrial and Organizational Psychology (SIOP) is to “enhance human well-being and performance in organizational and work settings by promoting the science, practice, and teaching of industrial-organizational [I-O] psychology” and, to this end, we aim to promote “the education of current and future industrial-organizational psychologists.” (SIOP a, 2009)

The number of future I-O psychologists is relatively large. In 2006, of those who responded to the SIOP member survey and indicated their membership status (n = 1728), about 32% reported being student members. Similarly, of those who indicated the years since earning their doctoral degree (n = 1083), nearly a quarter (23%) were recent grads in that they had only been out for somewhere between one and four years (SIOP b, 2009)

Proportionately, SIOP is reasonably balanced between those who identify themselves as “academic” and “applied.” Of those who responded to the SIOP member survey in 2006 and indicated their employment setting (n = 1724), about 41% reported working in academics (i.e., university/four-year college or other academic institution), about half (51%) reported working in some sort of business setting (i.e., consulting/independent practice, non-profit research organization, private sector business, or public sector organization), and about 7% in “other” settings (SIOP c, 2009).

SIOP operates under the science-practice model. This model proposes that psychologists should be trained to integrate science and practice. Furthermore, it states that activities in science and practice should inform each other. In clinical psychology, where the model originated, the science-practice model implies that training curricula should be structured to integrate research and clinical facilities whenever possible. In I-O psychology, the model suggests a reciprocal relationship such that “practitioners should look to the scientific literature for guidance on setting up effective workplace systems; scientists should take their cues from practitioners in identifying issues relevant to employee well-being and organizational effectiveness (Rupp & Beal, 2007, p. 36).

This emphasis on Science-practice in I-O psychology serves several functions for our profession, operating as a model, value system, mindset, and career metaphor for the field as whole. Although I-O psychologists generally agree that the scientific method should inform inquiry in research and practice, there is disagreement about how this should be implemented or approached. For example, many think the implications of the model -- that every individual member of SIOP should simultaneously be conducting research and practicing I-O psychology -- are unrealistic (Rupp & Beal, 2007, citing Brooks, Grauer, Thornbury, & Highhouse, 2003; Hays-Thomas, 2002; Kanfer, 2001; Murphy & Saal, 1990). We argue that it is not necessarily the ability to simultaneously conduct research and practice I-O psychology that is important; rather it is the ability to work effectively in both the science and practice spheres when necessary. Those who bring business and consulting skills along with their scientific knowledge and acumen will have a clear advantage in the workplace. Furthermore, these individuals will be better able to represent the science of I-O psychology because they will be able to communicate effectively about its relevance to practice.

SIOP has recognized the need to train students to work effectively within the science-practice model -- SIOP's (1999) guidelines for education and training at the doctoral level were revised (from 1985) in part to make the model more explicit. Indeed, according to the more recent guidelines, a “dual emphasis on theory and practice is needed regardless of a student's intended career path.” Moreover, one of the new competencies added in 1999 was “Consulting and Business Skills,” which includes the broad categories of communication, business development, and project management. It should be noted that these competencies will require practice -- that is, I-O graduates should not only know what these competencies are, but they should be able to execute them effectively. Many questions remain, however, about who should train these skills. For example, should I-O programs directly train these competencies?

Are I-O faculty best qualified to train these competencies, or should the competencies be trained through internship experiences?

In 2007, the Education and Training committee charged a sub-committee with the task of surveying a variety of stakeholders (employers, universities, and recent graduates) regarding the general competency of "Consulting and Business Skills." What skills do recent graduates have, and what are some areas in need of improvement? More specifically, the charge of this subcommittee was to examine the state of education on this competency area within I/O doctoral programs and MA programs to identify: (a) how many programs actively teach consulting skills, (b) the methods for teaching consulting skills, and (c) the specific skills being taught. This subcommittee was also tasked with surveying a set of practitioner organizations to identify (a) the consulting skills expected for new PhD and MA recipients and (b) the extent to which their recent hires at these levels possessed acceptable levels of these skills. Finally, the subcommittee was tasked with using the information from the surveys to identify areas where training programs need to improve with respect to training consulting skills.

SURVEY DESIGN AND ADMINISTRATION

A core set of survey items were developed to examine business and consulting skills identified by SIOP as being relevant to the practice of Industrial and Organizational (I/O) Psychology. These items focused on three primary areas (see Appendix A for a complete description): (1) *Communication* (business writing, business presentation, influence and persuasion skills, and the individual in the team), (2) *Business Development* (the ability to package ideas and practical problem-solving), and (3) *Project Management* (organizing work and integration and utilization of information). To obtain perspectives from both academic and practitioner domains, two versions of the survey were created (see Appendix B for final versions of the survey).

The "academic" survey examined the extent to which graduate training in I/O psychology provides opportunities to graduate students to develop business and consulting skills as well as the manner in which these opportunities are provided (e.g., formal course work, independent reading/study, supervised experience, etc.) Additionally, respondents were asked to indicate the extent to which graduate training programs in I/O psychology should provide opportunities to graduate students to develop business and consulting skills. The "industry" survey examined the extent to which employers expect new graduates trained in I/O psychology to possess business and consulting skills as well as the extent to which they believed these skills were actually possessed by typical new graduates. Response scales were five-point Likert scales ranging from 1 (Small/No Extent) to 5 (Great Extent). For both versions, participants were also given the opportunity to respond to a series of open-ended questions. Questar, SIOP's survey partner, provided survey design, administrative support, and data analysis for this project.

The survey population consisted of 2,631 SIOP members that met predetermined criteria, including employers of new I/O graduates in their first four years of employment, recent I/O graduates in their first four years of employment, faculty at PhD and Master's I/O programs, and students past their second year of graduate school. An e-mail was sent to all identified members on April 21, 2009 asking them to log onto the Questar website to complete the survey. The survey remained open until May 8, 2009, with a reminder e-mail sent to participants on May 4th.

SURVEY PARTICIPANTS

A total of 419 survey recipients responded to the survey, resulting in an overall response rate of 16% (see Table 1).

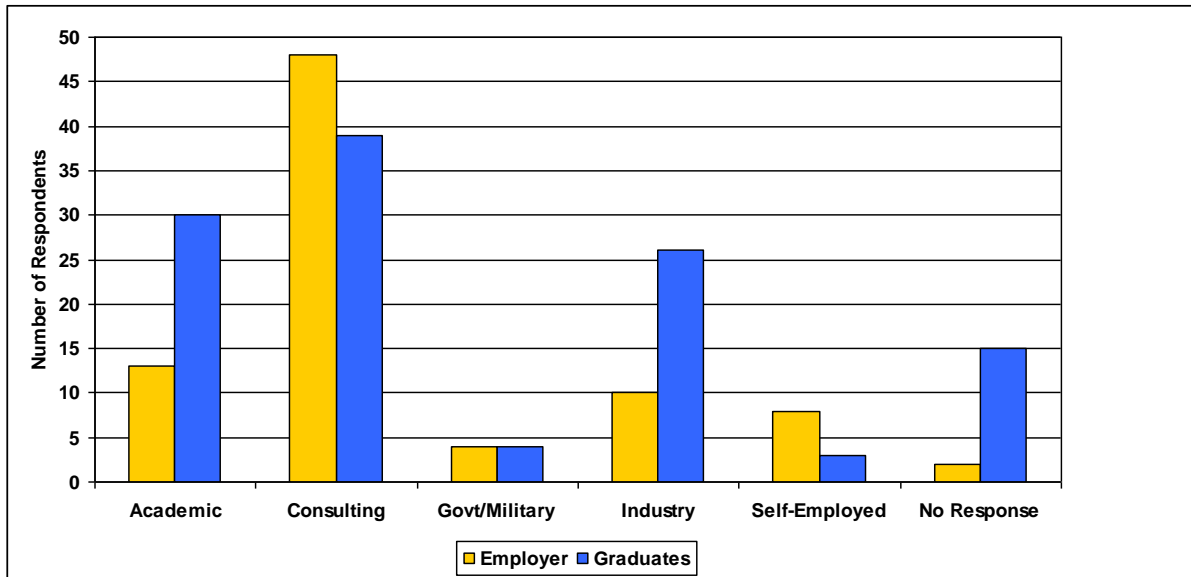
Table 1. Response rates by group.

Group	# Sent	# Responding	Response Rate
Faculty	295	44	15%

Students	1,334	173	13%
Employer	483	85	18%
Graduates	519	117	23%
Total	2,631	419	16%

Of the 202 employers and recent graduates who responded, 43% indicated that they worked in consulting, while 21% and 18% indicated that they worked in academia and industry, respectively (see Figure 1).

Figure 1. Number of employer and graduate respondents by employment setting.



Of the 212 faculty and student respondents, 58% were affiliated with PhD programs while 38% were affiliated with terminal Master’s programs. Only two individuals indicated that they were affiliated with PsyD programs. The highest degree attained for the majority of employer, recent graduate, and faculty respondents was a PhD (85%).

RESULTS

Faculty and Students

To examine the extent to which the development of business and consulting skills is integrated into graduate I/O Psychology programs, respondents were asked, *"To what extent does your graduate training program in I/O Psychology provide opportunities to graduate students to develop these skills?"* Table 2 displays mean responses for both faculty and students across the three areas of business and consulting skills.

Overall, both faculty and students agreed that opportunities to develop business and consulting skills were available in their graduate training programs, especially with regards to “working on project teams,” “organizing work,” and “integrating and utilizing information.” However, results suggest that faculty and students differed in their perceptions of the extent to which their graduate training programs provide these opportunities, with faculty members indicating greater availability of opportunities than students. T-tests revealed that only four of the nine skills were significantly different for faculty and students. As shown in Table 2, students rated the availability of opportunities for “business presentation,” “influence

and persuasion skills," "the individual in the team," and "working on project teams" significantly lower than faculty members.

To examine potential differences between the extent to which opportunities to learn business and consulting skills are provided and respondents' beliefs about the extent to which they should be provided, respondents were also asked, "To what extent should a graduate training program in I/O Psychology provide opportunities to graduate students to develop these skills?" Table 3 displays mean responses for both faculty and students across the three areas of business and consulting skills.

Table 2. Means and standard deviations for the extent to which graduate training programs provide opportunities to develop business and consulting skills.

	Faculty		Students		t	df
	Mean	SD	Mean	SD		
Communication skills in general	3.77	1.07	3.62	1.16	0.75	207
Business writing	3.14	1.10	2.90	1.28	1.12	213
Business presentation	3.55	1.21	3.11	1.25	2.04*	211
Influence and persuasion skills	3.35	1.04	2.76	1.13	3.10**	211
The individual in the team	4.12	1.00	3.37	1.16	3.88**	213
Working on project teams	4.39	0.95	3.69	1.31	3.24**	208
Business development skills in general	2.87	1.20	2.88	1.12	-0.03	200
Ability to package ideas	3.19	1.16	2.84	1.19	1.73	213
Practical problem-solving	3.58	1.14	3.28	1.13	1.55	211
Project management skills in general	3.63	1.13	3.45	1.26	0.82	199
Organizing work	3.60	1.16	3.60	1.29	0.01	212
Integrating and utilizing information	3.81	1.05	3.74	1.17	0.39	212

Note. *p ≤ .05; **p ≤ .01

Table 3. Means and standard deviations for the extent to which graduate training programs should provide opportunities to develop business and consulting skills.

	Faculty		Students		t	df
	Mean	SD	Mean	SD		
Communication skills in general	4.43	0.87	4.54	0.80	-0.81	213
Business writing	3.84	1.11	4.23	0.92	-2.41*	212
Business presentation	4.00	1.07	4.33	0.89	-2.07*	212
Influence and persuasion skills	3.98	0.98	4.20	0.92	-1.41	213
The individual in the team	3.95	1.26	4.05	0.89	-0.60	212
Business development skills in general	3.67	1.25	4.28	0.88	-3.70**	210
Ability to package ideas	3.80	1.13	4.33	0.86	-3.45**	213
Practical problem-solving	4.09	1.06	4.55	0.78	-3.20**	211
Project management skills in general	4.21	1.05	4.37	0.87	-0.98	211
Organizing work	4.23	0.89	4.42	0.86	-1.29	213
Integrating and utilizing information	4.40	0.90	4.55	0.76	-1.14	212

Note. *p ≤ .05; **p ≤ .01

Overall, both faculty and students felt strongly that I/O graduate training programs should provide opportunities to develop business and consulting skills, especially with regards to "general communication skills" and "integrating and utilizing information." Contrary to the results of the previous item, students

felt more strongly than faculty about the extent to which graduate training programs should provide these opportunities. As shown in Table 3, for five of the eight skills, students indicated that I/O graduate training programs should provide opportunities to develop these skills to a significantly greater extent than faculty members. These results suggest that there may be a disconnect between the opportunities that faculty believe they are providing for students and the opportunities that students perceive as available to them. Furthermore, as shown in Tables 4 and 5, paired t-tests¹ revealed significant within-group discrepancies between what is actually provided and what should be provided. These discrepancies are especially pronounced among students. Thus, it appears that both faculty and students agree that opportunities to develop business and consulting skills as part of I/O graduate training may not be as readily available as they should be.

Table 4. Faculty mean responses for graduate training does provide opportunities to develop business and consulting skills versus graduate training should provide opportunities.

	Does Provide Opportunities (Mean)	Should Provide Opportunities (Mean)	t	df
Communication skills in general	3.77	4.42	-3.71**	42
Business writing	3.19	3.81	-3.50**	41
Business presentation	3.56	3.95	-1.84	40
Influence and persuasion skills	3.35	4.00	-4.09**	42
The individual in the team	4.12	4.00	0.61	42
Business development skills in general	2.87	3.59	-3.46**	38
Ability to package ideas	3.19	3.79	-3.20**	42
Practical problem-solving	3.62	4.12	-2.51*	41
Project management skills in general	3.58	4.21	-3.09**	38
Organizing work	3.60	4.23	-3.44**	42
Integrating and utilizing information	3.83	4.38	-3.34**	41

Note. * $p \leq .05$; ** $p \leq .01$

Table 5. Student mean responses for graduate training does provide opportunities to develop business and consulting skills versus graduate training should provide opportunities.

	Does Provide Opportunities (Mean)	Should Provide Opportunities (Mean)	t	df
Communication skills in general	3.62	4.54	-9.76**	165
Business writing	2.90	4.23	-12.33**	170
Business presentation	3.11	4.33	-12.46**	170
Influence and persuasion skills	2.76	4.21	-14.66**	168
The individual in the team	3.38	4.05	-7.23**	169
Business development skills in general	2.88	4.27	-14.98**	160
Ability to package ideas	2.85	4.33	-16.26**	170
Practical problem-solving	3.30	4.55	-14.28**	167

¹ Paired t-tests require responses for each item in the pair. To meet these requirements, individuals who did not have complete pairs of responses were eliminated from the dataset. Thus, mean responses for items in Tables 4 and 5 are slightly different than those found in Tables 2 and 3. For the same reason, mean responses in Tables 7 and 8 are slightly different than those found in Tables 9 and 10.

Project management skills in general	3.45	4.38	-10.03**	160
Organizing work	3.62	4.42	-8.59**	170
Integrating and utilizing information	3.75	4.55	-9.25**	169

Note. **p ≤ .01

As shown in Table 6, there was also considerable disagreement between faculty and students with regards to the manner in which opportunities for developing business and consulting skills are provided in their graduate training programs.

Table 6. Manner in which opportunities for developing business and consulting skills are provided.

	Overall	Faculty	Students
Communication Skills			
Formal course work	79%	80%	79%
Independent reading/study	44%	25%	49%
Supervised experience	53%	86%	45%
On-the-job training	29%	49%	24%
Modeling/observation	44%	75%	36%
Business Development Skills			
Formal course work	47%	34%	50%
Independent reading/study	35%	16%	39%
Supervised experience	35%	57%	29%
On-the-job training	25%	34%	23%
Modeling/observation	24%	36%	20%
Project Management Skills			
Formal course work	61%	61%	61%
Independent reading/study	39%	43%	38%
Supervised experience	44%	61%	40%
On-the-job training	34%	48%	31%
Modeling/observation	29%	57%	23%

For example, faculty members indicated that supervised experience provided the primary opportunity to learn communication skills, business development skills, and project management skills while students indicated that formal course work provided the primary opportunity to learn these same skills. Employers and Graduates

To obtain a practitioner perspective on the importance of business and consulting skills to I/O graduate training, respondents were asked, "To what extent do you expect new graduates trained in I/O Psychology to possess this skill?" Table 7 displays mean responses for both employers and graduates across the three areas of business and consulting skills.

Table 7. Means and standard deviations for the extent to which new graduates are expected to possess business and consulting skills.

	Employer		Graduates		t	df
	Mean	SD	Mean	SD		
Communication skills in general	3.93	0.95	4.09	0.81	-1.33	196
Business writing	3.31	1.01	3.57	0.93	-1.91	199
Business presentation	3.15	1.01	3.65	0.98	-3.49**	199
Influence and persuasion skills	3.20	1.00	3.39	0.99	-1.34	199
The individual in the team	3.61	0.99	3.93	0.91	-2.24*	181
Business development skills in general	2.65	1.05	3.22	0.94	-3.92**	194

Ability to package ideas	2.95	1.04	3.50	0.95	-3.90**	191
Practical problem-solving	3.63	0.94	4.04	0.77	-3.40**	199
Project management skills in general	3.61	1.05	4.05	0.87	-3.18**	192
Organizing work	3.99	0.88	4.23	0.82	-1.99	199
Integrating and utilizing information	4.12	0.87	4.30	0.71	-1.63	198

Note. * $p \leq .05$; ** $p \leq .01$

Interestingly, results indicated that graduates felt that they were expected to possess business and consulting skills upon completion of their graduate training programs to a significantly greater extent than employers. These differences in expectations were especially pronounced for business presentation skills and business development skills. These findings were further supported by written comments, which suggest that employers expect new graduates to come into the organization with strong basic technical skills (e.g., knowledge of the field, data analysis, problem-solving) but believe that practical business and consulting skills will develop over time through experience and on-the-job training. Thus, it appears that recent I/O graduates may have misperceptions about what is expected of them as new hires in the workforce. Parallels may be drawn between these findings and those of the faculty and student survey. Perhaps students felt that opportunities to develop business and consulting skills should be available to a greater extent than faculty members because they have inaccurate perceptions of what skills are expected of them as new hires.

To examine potential differences between business and consulting skills expected of I/O graduates and those skills that are actually possessed by typical I/O graduates, respondents were also asked, "*To what extent do you believe this skill is actually possessed by typical new graduates trained in I/O Psychology?*" Table 8 displays mean responses for both employers and graduates across the three areas of business and consulting skills.

Table 8. Means and standard deviations for the extent to which graduates actually possess business and consulting skills.

	Employer		Graduates		t	df
	Mean	SD	Mean	SD		
Communication skills in general	2.68	0.81	2.97	0.81	-2.47*	198
Business writing	2.02	0.74	2.43	0.83	-3.59**	198
Business presentation	2.04	0.78	2.56	0.88	-4.36**	198
Influence and persuasion skills	2.33	0.88	2.45	0.85	-0.99	197
The individual in the team	2.87	0.91	3.12	0.93	-1.84	191
Business development skills in general	1.89	0.73	2.33	0.70	-4.29**	195
Ability to package ideas	2.21	0.92	2.52	0.81	-2.47*	198
Practical problem-solving	2.70	0.83	2.79	0.87	-0.71	194
Project management skills in general	2.89	0.81	2.96	0.95	-0.53	195
Organizing work	3.11	0.90	3.22	0.98	-0.79	197
Integrating and utilizing information	3.10	0.83	3.30	0.93	-1.63	198

Note. * $p \leq .05$; ** $p \leq .01$

Results indicated that overall, employers and graduates agreed that business and consulting skills were not possessed to a great extent by typical new graduates in I/O Psychology.

Similar to the findings from the faculty and student survey, there appears to be a gap between what skills graduates are expected to possess and what skills they actually possess across both employers and graduates. As shown in Tables 9 and 10, for both employers and graduates, there were significant differences between skills expected and skills possessed across all of the business and consulting skills.

These differences were greater for graduates than employers, perhaps due to graduates' perceptions that opportunities to develop these skills in graduate school are very limited.

Table 9. Employer mean responses for business and consulting skills expected of typical graduates versus skills possessed by typical graduates.

	Expect Skills (Mean)	Possess Skills (Mean)	t	df
Communication skills in general	3.93	2.70	12.30**	81
Business writing	3.31	2.02	11.37**	83
Business presentation	3.15	2.04	10.03**	83
Influence and persuasion skills	3.20	2.33	7.23**	82
The individual in the team	3.61	2.72	7.37**	73
Business development skills in general	2.65	1.89	7.14**	81
Ability to package ideas	2.95	2.21	7.06**	83
Practical problem-solving	3.63	2.70	7.88**	80
Project management skills in general	3.62	2.89	7.13**	78
Organizing work	4.02	3.10	9.88**	82
Integrating and utilizing information	4.12	3.10	12.35**	84

Note. **p ≤ .01

Table 10. Graduate mean responses for business and consulting skills expected of typical graduates versus skills possessed by typical graduates.

	Expect Skills (Mean)	Possess Skills (Mean)	t	df
Communication skills in general	4.09	2.97	13.09**	114
Business writing	3.59	2.43	13.40**	115
Business presentation	3.66	2.56	10.61**	115
Influence and persuasion skills	3.40	2.45	9.74**	116
The individual in the team	3.94	3.12	8.12**	107
Business development skills in general	3.20	2.33	9.51**	111
Ability to package ideas	3.51	2.52	10.24**	115
Practical problem-solving	4.05	2.79	14.42**	114
Project management skills in general	4.05	2.94	12.10**	112
Organizing work	4.22	3.22	10.78**	112
Integrating and utilizing information	4.30	3.32	11.14**	115

Note. **p ≤ .01

IMPLICATIONS

Our study yielded a set of implications for all of the included stakeholders: students and new graduates, employers, faculty and program directors, and SIOP as a profession.

Graduate students want it all. Three-quarters or more of graduate-student respondents say that their graduate training program should to a great extent provide opportunities for the development of each and every skill inquired about in this survey. How do we interpret this result?

Does it indicate undifferentiated, want-it-all wishing by novices? Are we seeing a calculated response to the anticipated entry into a job market, wanting to be armed with every possible advantage? Perhaps the result expresses the enthusiasm, ambition, and open-mindedness that highly-talented individuals so often bring to I/O psychology programs?

Faculty responses are like those of students' for the most part but differ with regard to the relative importance of business development skills and the ability to package ideas. Noteworthy, too, is that recent graduates' views are more like those of employers than those of the student peer group they recently departed.

Employers don't expect it all. Most employers have clear priorities among the skills it expects new I/O graduates to express: technical skills are paramount; communication skills are essential; business skills are nice but not necessary. The order of importance of these sets of skills is perhaps best communicated in open-ended survey responses from employers, such as these:

"Technical knowledge is important. As long as a new graduate can communicate well, is organized, and has decent interpersonal skills we can teach business skills on the job."

"We do not expect a new graduate to possess business and consulting skills ... we really expect to train new hires in business skills... we really want and expect new graduates to have strong technical skills. It's also good for them to be good writers and have good oral communication skills."

"What differentiates I/Os from others in the business world is our training in measurement and research methodology which, according to recent reviews, is and has been underemphasized in psychology departments across the country (Aiken's work in *American Psychologist*). If we don't have time for such topics in our current graduate programs how can we make time for 'skills' that could be honed through experience?"

Ratings of the extent to which employers expect new graduate to possess these skills also illustrate this pattern of importance. For example, 70% of employers expect new graduates to have good communication skills to a great extent but only 32% and 23% expect new graduates to have comparable business presentation and business development skills, respectively.

Recent graduates' expectations concur with those of most employers, for example:

"Technical competency in measurement, psychometrics, statistics, psychological theory [are critical]. I/O cannot become more relevant by becoming more like an MBA program. I/O can only become more relevant by filling a unique niche of social scientists who have business insight and skill."

"Graduate school should be more about teaching critical thinking and theoretical underpinnings."

Dealing with complex information – 75% of employers expect new graduates to excel at integrating and utilizing information – and skills at organizing and project management also are expected of new graduates by employers (71% and 56% say these skills should be present to a great extent, respectively).

Some employers clearly want I/O training programs to emphasize general business skills:

"I think that general business acumen must be taught...even more business courses should be encouraged."

“New I/Os need to understand the language of business and need a good grounding in marketing, finance, and strategy.”

It should be noted, however, that our approach does have one glaring limitation – we did not include the perspectives of non-I/O employers. Employers accustomed to MBA's may be delighted with I/O graduates' expertise and methodological rigor, but disappointed in their facility with the very skills this project addresses. This, in turn may limit the I/O grads ability to be influential, and ultimately may be limiting to the ability of I/O Psychology as a profession to expand our influence beyond the niche specialties in which we frequently operate.

While few would dispute the idea more rather than less general business savvy is good for I/O graduates, for the profession of I/O Psychology the critical issue remains one of proportion. Overemphasizing generic business education could grind down the core of professionalism in the training of I/O Psychologists. On the other hand, deepening the knowledge of general business issues may accelerate the new graduate's success at getting science into practice.

There are some notable gaps between skill levels desired and possessed. Gaps are abundant: For all skills assessed in this survey employers' expectations exceed the levels they report seeing in new I/O graduates. There are, however, certain notable gaps. We define these as skills which a majority of employers expect to see to a great extent and for which there is a greater than 50 percentage point difference between those expectations and reported levels of skills possessed.

- Communication: 70% of employers expect moderate or greater communication skill levels but 14% believe they experience new graduates' skills at that level
- The individual in the team: 77% of employers expect to see this skill to a great extent in new graduates but only 24% experience it so.
- Practical problem solving: 56% of employers expect to see this skill evident to a great extent in new graduates and 12% report seeing it at that level of development.
- Integrating and utilizing information: 76% of employers expect this skill to a great extent and 33% report that new I/O graduates possess the skill to that extent.

Implications for Faculty/Program Directors

Provide realistic and clear communication regarding the program's attention to building consulting skills. Graduate training programs in I/O Psychology should emphasize the technical core of the profession – research methods, measurement, psychological theory, critical thinking. The results of this survey indicate a wide range of views on the degree to which programs see as part of their mission the training of future practitioners.

We are a field of science and practice and there is room within our tent for programs that see practitioner preparation as core or who see this as inappropriate and all shades in between. However it behooves programs to make their stance on this issue clear in both formal and informal communications to perspective and incumbent students. Student responses on the survey express a level of frustration that their programs are not meeting their expectations in the level of focus and encouragement in support of developing strong practitioner skills. Programs need to communicate honestly and clearly so that incoming students arrive with accurate expectations.

Additionally, graduate programs should clarify for current students the intended linkages between method of training (supervised experience, independent projects, on-the-job training) and the skills

enhanced by each method. Independently, students can pursue extracurricular activities that hone the needed skills.

Graduate programs may be able to foster more well-rounded professionals by attending carefully those entering and leaving their programs. In selecting new students, they may want to consider giving additional weight to communication skills and the ability to work in teams to complement academic credentials and other qualifying accomplishments. They may endeavor to keep recent graduates active in their programs to calibrate current students' expectations to those of employers and/or to coach and mentor more junior students in the business skills they are less likely to learn in the classroom.

Finally, graduate programs should diagnose the strengths and weakness of their current methods for developing those skills for which notable gaps are reported – communication, working in teams, practical problem solving, and integrating complex information – and redesign the their training programs to provide more of the best opportunities for their students to develop these skills

There are skills common to excellence as academics *and* practitioners that need to be more thoughtfully nurtured in graduate education. No matter what their focus, all graduates need strong skill in written and oral communications, teaming, and project management. Faculty respondents to the survey recognized a significant gap between the level of skill development they should be providing and the level they currently provide. Academic journal editors are frustrated by manuscripts that are poorly written no less than prospective corporate employers. Graduate programs across the spectrum should build in more opportunities for students to practice preparing for and delivering formal oral presentations and provide students with structured, detailed, actionable feedback on those presentations.

We all know the challenge of transitioning from attending classes and working on a professor's research program to initiating and executing a complex 1-2 year dissertation research project independently. Shouldn't all programs provide some formal training (not necessarily a course) in project management, including planning, milestones, resource allocations, prioritization, and measurement of progress? Also, while many might argue that graduate I/O programs should not be teaching finance and accounting, they should be encouraging students to learn macro-organizational theory, strategy, and design, even if that course is only taught in the B-school or the Sociology Department.

We also note that many, perhaps most, programs do not assess core written and oral communications skills in selecting students into their programs. Programs that assess and select students in part for effective communications skills, as suggested above, would better serve all of their markets—academic and practitioner alike—as well as our collective interest in communicating widely findings that can benefit society at large. In doing so, we should practice what we preach, using methods with proven validity to measure the target skills and getting input from the target market (organizations—academic and/or nonacademic) to establish appropriate selection standards.

Those programs that aim to train graduate students to be practitioners should adopt systematic processes to achieve these aims. Faculty often think that simply by personally modeling key practitioner skills, students will learn through observation. Students do not agree. Faculty with consulting practices often think that giving students "real-world" data to analyze and summarize creates a meaningful opportunity to develop practitioner skills. Students do not agree. They are looking for involvement in the diagnostic and implementation sides of their professor's consulting project, including exposure (even if only as an observer) to the client. Students can best develop target practitioner skills through multiple, intentionally structured learning experiences.

Like all good training, these experiences—internships, practicum courses, team projects, participation in MBA business games, work on faculty consulting projects—have greatest impact if they are consciously

structured with clear learning objectives, frequent measurement of and feedback on progress against those objectives, and time for reflection and integration.

Implications for SIOP

SIOP can play an active role in preparing students for nonacademic careers. The survey results suggest several concrete ways that SIOP can better meet the needs of students—especially those in highly academic programs who are oriented towards practitioner careers.

- SIOP can serve as a national clearinghouse for internship opportunities and, on behalf of graduate programs and their students, can “vet” these internships to assure that their content and the supervision students will receive will provide valuable learning experiences.
- Similarly, SIOP can serve as a matchmaking service, creating an on-line listing comprising a virtual network of SIOP member practitioners willing to serve as mentors to graduate students. The listing can spell out clear commitments and expectations (say, 4-6 30-minute phone calls over the 9-month academic year).
- Best practices of graduate programs and faculty for building practitioner skills can be collected and disseminated through a regular TIP column or a bulletin board on the SIOP website.
- SIOP can sponsor regional and even a national “Consulting Challenge” competition. The competition finals can be staged either at the annual conference or during the I/O –OB student conference. The audience can be a distinguished panel of I/O psychologists who serve in HR generalists roles in corporate or public service settings.
- Under the auspices of SIOP, leading and novice practitioners can broadcast a 30-minute webcast describing a recent project or reflecting on their careers. These webcasts can be scheduled as virtual “brown bags”, and archived in the student section of the SIOP website. These could be offered on a regular basis, say early PM Central the first Friday each month of the academic calendar.
- SIOP can compile a set of generalized RFPs catalogued by topic (e.g., job analysis, survey research, performance management, test validation, training evaluation) that can be used by faculty looking to provide students with practical projects.

Taken together, these results and recommendations identify pain points for us as a community of I/O Psychologists, and offer remedies that will enhance our effectiveness and impact in both the academic and practitioner spheres.

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¹ Society for Industrial and Organizational Psychology, Inc. Member survey results by membership status. Retrieved June 19, 2009, from <http://www.siop.org/userfiles/image/2006membersurvey/2006%20Membership%20Status1.pdf>

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APPENDIX A

Detailed Description of Business and Consulting Skills

Communication

- *Business writing* – characterized by its brevity, action orientation, attention to the audience and link to the organization's bottom line.
- *Business presentation* – development and presentation of information to a business audience that clearly articulates key messages in terms audience can understand, along with skills in presenting and responding to questions.
- *Influence and persuasion* - required to interact with and influence organizational members.
- *The individual in the team* – understanding of how individual efforts facilitate group performance and the ability to contribute as a member of the group are essential.
- *Working on project teams* - extent to which students are enabled to learn consulting skills by working on project teams.

Business Development

- *Ability to package ideas*, proposals, and requests in a fashion which leads to their acceptance and movement of the organization in desired directions.
- *Practical problem-solving* – approach relevant content and methodological skill or knowledge along with creative “outside the box” thinking and understanding of how elements relate to the larger whole.

Project Management

- *Organizing work* – budgeting, scheduling, and managing others so that work is accomplished in an efficient and effective manner.
- *Integrating and utilizing information from several sources* – success is contingent upon being able to attend to detail while maintaining a view of the “big picture.”

APPENDIX B

Faculty and Student Survey

Thank you for your willingness to participate in the SIOP Education and Training Committee's survey regarding the Business and Consulting Skills of new graduates in I/O Psychology. We appreciate your insights and suggestions as we move forward on this project, which is sponsored by SIOP's Executive Committee.

Below is a list of business and consulting skills identified by SIOP as being relevant to the practice of I-O Psychology. Please review the list and definitions. The bolded text is then repeated in the questions below to refer to the specific skills.

SKILLS LIST

Communication

- **Business writing** (characterized by its brevity, action orientation, attention to the audience, and link to the organization's bottom-line)
- **Business presentation** (development and presentation of information to a business audience that clearly articulates key messages in terms audience can understand, along with skills in presenting & responding to questions)
- **Influence and persuasion skills** (required to interact with and influence organizational members)
- **The individual in the team** (understanding of how individual efforts facilitate group performance and the ability to contribute as a member of a group are essential.)
- **Working on project teams** (extent to which students are enabled to learn consulting skills by working on project teams)

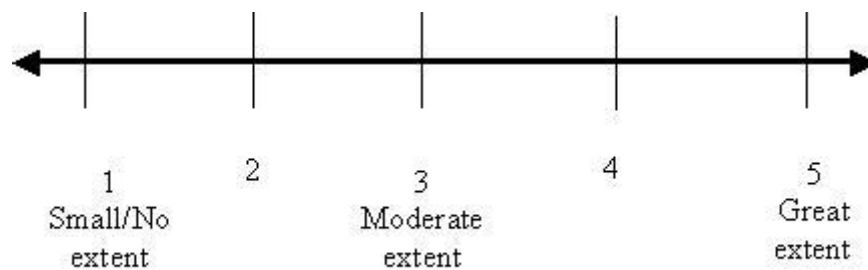
Business development

- **Ability to package ideas**, proposals, and requests in a fashion which leads to their acceptance and movement of the organization in desired directions
- **Practical problem-solving** approach (relevant content and methodological skill or knowledge along with creative "outside-the-box" thinking and an understanding of how elements relate to a larger whole)

Project management

- **Organizing work** - e.g., budgeting, scheduling, and managing others so that work is accomplished in an efficient and effective manner.
- **Integration and utilization of information** from several sources. Success is contingent upon being able to attend to detail while maintaining a view of the "big picture."

Using the scale below, to what extent does your graduate training program in I/O Psychology provide opportunities to graduate students to develop these skills?

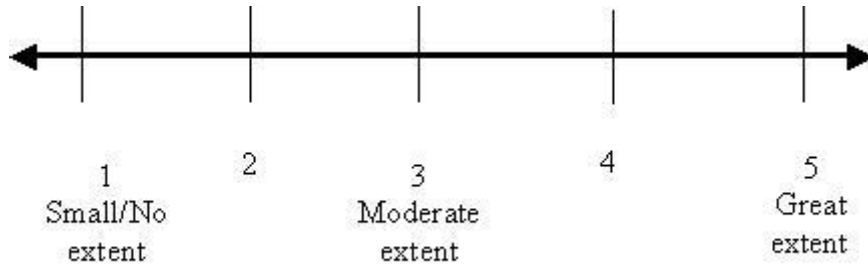


	1	2	3	4	5
Communication Skills in General	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business writing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Influence and persuasion skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The individual in the team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working on project teams	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Development Skills in General	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to package ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Practical problem-solving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Management Skills in General	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organizing work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integration/ utilization of information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In what manner are these opportunities provided? Check as many options as are appropriate for each skill.

	Formal Course Work	Independent Reading/Study	Supervised Experience (and field research)	On-the-Job Training	Modeling/Observation
Communication Skills in General	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business writing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication/interpersonal skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Individual in the team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Working on project teams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business development skills in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to package ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Practical problem solving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Management Skills in General	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organizing work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Integration/utilization of information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Using the scale below, to what extent *should* a graduate training program in I/O Psychology provide opportunities to graduate students to develop these skills?



Communication Skills in General

	1	2	3	4	5
Business writing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Influence and persuasion skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The individual in the team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Business Development Skills in General

Ability to package ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Practical problem-solving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Project Management Skills in General

Organizing work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integration/ utilization of information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Are there specific things that your program does to help students develop business and consulting skills?

If so, please elaborate below by naming the skill(s) and explaining your program's approach (e.g., a specific course or course component, mentorships, internships, other experiences, etc.)

Are there any other comments you would like to provide for the Education and Training Committee regarding the business and

consulting skills of new graduates in I/O Psychology?



Finally, with what type of graduate training program in I/O Psychology are you affiliated? (Please check all that apply.)

- Terminal Master's Program
- Ph.D.
- Psy.D.

Thank you for your time! Please click on the "Submit" button to complete this survey.

APPENDIX C

Employer and Graduate Survey

Thank you for your willingness to participate in the SIOP Education and Training Committee's survey regarding the Business and Consulting Skills of new graduates in I/O Psychology. We appreciate your insights and suggestions as we move forward on this project, which is sponsored by SIOP's Executive Committee.

Below is a list of business and consulting skills identified by SIOP as being relevant to the practice of I-O Psychology. Please review the list and definitions. The bolded text is then repeated in the questions below to refer to the specific skills.

SKILLS LIST (Complete Description)

Communication

- **Business writing** (characterized by its brevity, action orientation, attention to the audience, and link to the organization's bottom-line)
- **Business presentation** (development and presentation of information to a business audience that clearly articulates key messages in terms audience can understand, along with skills in presenting & responding to questions)
- **Influence and persuasion skills** (required to interact with and influence organizational members)
- **The individual in the team** (understanding of how individual efforts facilitate group performance and the ability to contribute as a member of a group are essential.)

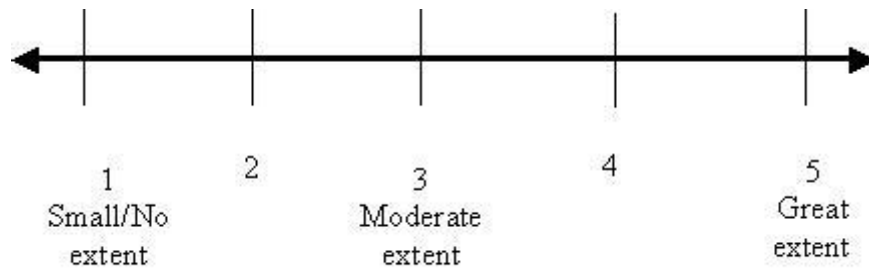
Business development

- **Ability to package ideas**, proposals, and requests in a fashion which leads to their acceptance and movement of the organization in desired directions
- **Practical problem-solving** approach (relevant content and methodological skill or knowledge along with creative "outside-the-box" thinking and an understanding of how elements relate to a larger whole)

Project management

- **Organizing work** - e.g., budgeting, scheduling, and managing others so that work is accomplished in an efficient and effective manner.
- **Integration and utilization of information** from several sources. Success is contingent upon being able to attend to detail while maintaining a view of the "big picture."

For all of the questions, please refer to the 5-point scale below to indicate the extent to which you believe that the skill is (for example) expected in and possessed by new graduates trained in I/O psychology - i.e., to a small or no extent, to a moderate extent, to a great extent, etc.



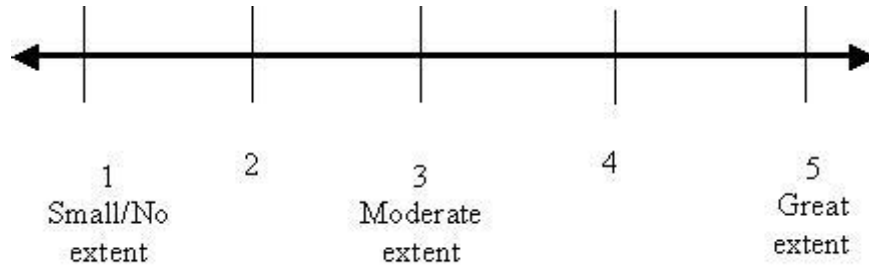
1. Please indicate the extent to which you expect new graduates trained in I/O Psychology to possess this skill.

	1	2	3	4	5
Communication Skills in General	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business writing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Influence and persuasion skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual in the team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Development Skills in General	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to package ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Practical problem-solving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Management Skills in General	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Organizing work

Integration/utilization of information

2. Again using the scale below, please indicate the extent to which you believe this skill is actually possessed by typical new graduates trained in I/O Psychology.



	1	2	3	4	5
Communication Skills in General	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business writing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Influence and persuasion skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individual in the team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business Development Skills in General	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to package ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Practical problem-solving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project Management Skills in General	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organizing work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integration/utilization of information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Can you think of instances in which new I/O hires did possess the business and consulting skills required of the job?

If so, please elaborate below by naming the skill(s) and explaining how the new hires business and consulting skills impacted performance.

4. Can you think of instances in which new I/O hires did not possess the business and consulting skills required of the job?

If so, please elaborate below by naming the skill(s) and explaining how the new hires' lack of business and consulting skills impacted performance.

5. Are there any other comments you would like to provide for the Education and Training Committee regarding the business and consulting skills of new graduates in I/O Psychology?

For example, are there other business and consulting skills we should assess in the full survey, beyond those identified in SIOPs competency model?

On behalf of SIOP and the Education and Training Committee, thank you for your time! Please click on the "Submit" button to complete this survey.