The 2011 SIOP Graduate Program Benchmarking Survey Part 3: Curriculum and Competencies

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This is the third installment of the report on the 2011 SIOP Graduate Program Survey. Having addressed general program features and admissions requirements in the first two articles, we turn here to courses and competencies. Programs differ definitively in the courses they offer and require students to take. We asked respondents to describe their programs with respect to both substantive (e.g., personnel selection, leadership) and methodological (e.g., research methods, statistics) content areas. We also asked how much they focus on each of 25 competencies identified by SIOP (1999) as relevant to I-O psychology practice.

As in the earlier articles, results are provided for all responding programs combined and in terms of a 2 x 2 breakout of master's and doctoral programs in both psychology and business/management departments. Also as in the earlier works, non-American programs are excluded due to lack of representation, and norms are reported separately for Gibby, Reeve, Grauer, Mohr, and Zickar's (2002) top-10 most productive doctoral programs, and Kraiger and Abalos' (2004) top-10 master's and doctoral programs (two separate lists) based on student ratings. Median and range data are given, in addition to means and standard deviations, as many distributions are skewed. Nominal data are reported as frequencies and percentages, and *F* and χ^2 results are provided for continuous and nominal DVs, respectively. To save space, most tables are available online at http://www.utulsa.edu/TIP-curriculum-tables. Finally, norms are provided only when *N* is 3 or more. We start with course frequency and requirement levels.

Curriculum

A list of 23 substantive and 15 methods topics was developed for the survey as reasonably comprehensive of I-O course content. We asked how often in the past 5 years (from 2011) each course had been offered and whether the course was (a) required, (b) one of several options within a limited set (e.g., "must take 3 of these 5 courses"), or (c) an elective (i.e., optional).

One aim in this section was to assess relative curricular emphasis on I versus O content. The I-O distinction is blurry, at best. For present purposes, industrial psychology is understood to include topics such as job analysis, personnel recruitment and selection, training, and performance appraisal; and organizational psychology to include topics such as work attitudes, motivation, leadership, teams, and organizational development. Whereas I psychology tends to focus on applied HR functions targeting individual differences and their measurement, O psychology tends to target broader psychological processes, organizational systems, and relevant theory. This is not to say I psychology ignores theory or O psychology eschews measurement. The two broad subareas, in fact, overlap in many ways (e.g., selecting good leaders benefits from good theory and good measurement), creating something of a false dichotomy when directly compared. Nonetheless, we expect most readers will recognize distinctions along the noted lines, and current results bear consideration in such terms.

The first three substantive courses in our list are "General I-O (e.g., Survey of I-O)," "General I (e.g., Survey of I)," and "General O (e.g., Survey of O)." Norms for each of those courses are informative, but their separation creates a "split-vote" problem. Thus, a program might offer both General I and General O courses but not a combined General I-O course. In order to gauge the comprehensive balance of general I and O content offerings, we aggregated data across programs offering a General I-O course and/or both a General I and a General O course. Corresponding results are reported here as "Combined Comprehensive."¹ A similar issue arises in judging emphasis on separate I and O domains. For example, if a program offers a General I-O course warrants splitting between I and O, augmenting the O-only value by half of the General I-O value. These results are presented as "General I Augmented" and "General I-O value.

In tracking the requirement levels for general course content aggregated as above, we adopted the higher requirement level when input courses are offered at different levels. For example, if a General I-O course is required, a General O course is an elective, and a General I course is not offered, the requirement level for Combined Comprehensive in this case would be "required," as would the levels for both General I Augmented and General O Augmented, owing to the General I-O course being required (implying that both general I and general O material is required). "Required" would also be assigned to all three aggregated variables if both General I and General O courses are required, but a General I-O course is an elective or not offered. Albeit somewhat complex, these aggregations permit more accurate description of the emphasis programs place on I-O as a comprehensive domain and on I and O as distinct domains.

Table 1 presents norms for frequency of substantive course offerings over 5 years. Courses are organized conceptually into several categories, and averages per year are shown for each category and overall. Several points bear noting here. Regarding I and O as distinct yet broad domains, General O content is offered more frequently than General I content (means = 3.74 vs. 2.97, respectively). This trend appears to reverse in the specialized courses, the three most common targeting traditional I topics: training and development, personnel recruitment/selection/placement, and performance appraisal (range of means = 2.19 to 2.74), and the next four targeting traditional O topics: leadership/man-

¹ Programs offering only General I or only General O are excluded from the combined comprehensive category.

Table 1

<u>a</u>						
Category/course	Mean	SD	Skew	Median	Min	Max ^a
General: observed						
General I-O (e.g., "Survey of I-O")	1.95	2.46	.61**	0	0	6
General I (e.g., "Survey of I")	2.00	2.31	.47*	0	0	6
General O (e.g., "Survey of O")	2.76	2.32	17	3	0	6
Average per year	1.34	.77	.12	1.2	.0	3.2
General: aggregated ^b						
Combined comprehensive	3.95	2.55	.01	5.0	.0	11.0
General I augmented	2.97	2.15	.30	2.8	.0	8.0
General O augmented	3.74	2.08	08	3.8	.0	8.0
Industrial psychology						
Job Analysis	1.32	1.99	1.15**	0	0	6
Personnel recruitment/selection/placement	2.60	2.17	01	3	0	6
Training and development	2.74	2.12	04	3	0	6
Performance appraisal	2.19	2.18	.37	2	0	6
Job evaluation/compensation	.78	1.69	2.05**	0	0	6
Employment law	.76	1.53	1.97**	0	0	6
Average per year	2.08	1.73	.56**	1.8	.0	6.2
Organizational psychology						
Work motivation	1.75	1.94	.70**	1	0	6
Work attitudes	1.35	1.98	1.21**	0	0	6
Work groups/teams	1.65	1.92	.81**	1	0	6
Leadership/management	2.18	2.15	.39	2	0	6
Judgment/decision making	.51	1.26	2.72**	0	0	6
Organizational development	1.94	2.39	.61**	0	0	6
Organizational theory	1.26	2.03	1.29**	0	0	6
Work/family	.36	.87	2.53**	0	0	4
Work stress	.53	1.30	2.85**	0	0	6
Average per year	2.30	1.67	.87**	2.0	.0	8.0
Mixed/miscellaneous						
Human factors	.43	1.23	3.10**	0	0	6
Consulting/business skills	1.54	2.20	1.00**	0	0	6
Workforce diversity	1.04	1.83	1.58**	0	0	6
Workforce aging	.15	.65	4.81**	0	0	4
Individual differences in the workplace	1.03	1.80	1.47**	0	0	6
Average per year	.84	1.00	1.18**	.4	.0	4.0
Overall average per vear	6.56	3.59	85**	64	6	174

Frequency of Substantive Courses Offered in the Past 5 Years for All Programs Combined (N = 118)

Excluding non-US. *p < .05, **p < .01, two-tailed

^a Response options capped at 6.

^b Combined comprehensive = general I-O and/or (general I + general O) General I augmented = general I + half of general I-O

General O augmented = general O + half of general I-O

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agement, organizational development, work motivation, and work groups/teams (range = 1.65 to 2.18). The apparently higher frequency of I courses is offset, however, by the larger number of O courses (nine vs. six). Average specialized course offerings per year are 2.1 and 2.3 in I and O, respectively. All told, I and O content is fairly balanced, with O favored slightly. The overall average per year of around 6.6 (including general observed courses) is a core benchmark for substantive I-O course offerings across all contributing programs.

Tables 2 and 3 present substantive course frequency norms for the 2 x 2 breakout; test results are reported in Table A1 (online), and category means are plotted in Figure A1 (online). Key comparative findings are as follows, beginning with department type effects. First, general I-O and general I and O courses (separately) are offered more often in psychology departments. This holds for both the observed and aggregated data. For comprehensive I-O and augmented I content, the ratio approaches 3:1; for augmented O content, 2:1; and for general courses combined, 2.2:1. Second, core I-related courses are offered considerably more often in psychology-based programs, ratios ranging from around 4:1 for job analysis and personnel selection to 7.5:1 for performance appraisal. Other I-related courses (job evaluation/compensation, employment law) are offered infrequently in both department types. The ratio for all I-related courses combined exceeds 4:1. Third, the psychology > business/management trend holds for several mainstream O-related courses, albeit abated: the ratios for work motivation and work groups/teams are around 2.5:1, and, for work Attitudes, about 5:1. Courses on work/family issues, work stress, and aging are available only in psychology departments (but rarely). Showing the only opposite effect, organizational theory courses are more prevalent in business/management departments (ratio = 2.4:1). Leadership courses are offered with roughly equal frequency (Nweighted means = 2.1 for psychology vs. 1.8 for business-management). Combining all O-related courses, the ratio is 1.5:1. Combining courses in all substantive categories, psychology department offerings outnumber business/management offerings by a 2.2:1 margin (around 7 per year vs. around 3).

Turning to degree type effects, fewer differences emerge. A notable exception is that training courses are twice as common in master's compared to doctoral programs, perhaps reflecting the especially practical relevance of training. Interactions between degree and department types suggest more nuanced effects. Leadership/management courses are especially more common in business-management master's programs (mean = 3.2) compared to business-management doctoral programs (1.1), whereas the difference is muted in psychology departments (mean = 2.1 for both degree types). Similar patterns are evident for courses on organizational development, consulting/business skills, organizational theory, and judgment/decision making (with more modest frequencies in the latter case).

Summarizing the 2×2 findings on frequency of substantive course offerings, two visible trends are that (a) psychology departments tend to offer

Frequency of Substantive Courses Offe	red in th	ie Past	5 Years	in Maste	er's a	nd Doc	toral Pr	ograms	in Psyc	hology l)eparti	nents
Category/Course	Mean	Master SD	's progra Skew	$\frac{ms}{N=5}$ Median P	(4) Min	Max ^a	Mean	SD Docte	oral progra Skew	ams (N = Median	41) Min	Max ^a
General: observed General LO (e.g. "Survey of LO")	C0 C	7 53	53	C		9	1 05	2 48 8 4	58	C		9
General I (e.g., "Survey of I")	2.11	2.38		00		0 0	2.41	2.26	200	20	00	9
General O (e.g., "Survey of O")	2.83	2.38	22	4	0	9	3.10	2.19	52	14	0	9
Average per year	1.40	.80	.18	1.2	0.	3.2	1.49	.66	01	I.6	0.	3.0
General: aggregated ^b												
Combined comprehensive	4.14	2.67	.13	5.0	0.	11.0	4.41	2.11	02	5.0	0.	10.0
General I augmented	3.15	2.28	.32	3.0	0.	8.0	3.39	1.85	60.	3.0	0.	7.5
General O augmented	3.87	2.13	03	4.5	0.	8.0	4.07	1.78	20	5.0	0.	7.5
Industrial psychology												
Job analysis	1.57	2.12	.89**	0	0	9	1.24	1.92	1.28^{**}	0	0	9
Personnel recruitment/selection/placement	3.17	2.10	51	4	0	9	2.54	2.09	.08	ŝ	0	9
Training & development	3.80	1.74	88**	5	0	9	2.07	1.98	.52	0	0	9
Performance appraisal	2.93	2.17	21	c	0	9	1.95	2.06	.65		0	9
Job evaluation/compensation	1.04	1.93	1.61^{**}	0	0	9	.44	1.36	3.26^{**}	0	0	9
Employment law	1.06	1.74	1.38 * *	0	0	S	.49	1.23	2.89**	0	0	5
Average per year	2.7I	1.67	.15	2.7	0.	6.2	1.75	1.67	1.05^{**}	I.0	0.	6.0
Organizational psychology												
Work motivation	1.96	2.06	.52	0	0	9	2.02	1.80	.56	0	0	9
Work attitudes	1.78	2.19	* <i>L</i> L.	-	0	9	1.41	1.99	1.20^{**}	0	0	9
Work groups/teams	1.87	2.06	.57	-	0	9	1.49	1.68	-98	-	0	5
Leadership/management	2.11	2.24	39	7	0	9	2.05	1.96	.58	0	0	9
Judgment/decision making	.44	1.33	3.19**	0	0	9	.59	1.16	2.20 * *	0	0	5
Organizational development	2.22	2.43	.35	1	0	9	1.34	2.12	1.25 **	0	0	9
Organizational theory	1.19	1.99	1.30^{**}	0	0	9	.78	1.77	2.09**	0	0	9
Work/family	39	.94	2.53**	0	0	4	44.	90	2.06^{**}	0	0	ę
Work stress	.70	1.54	2.30^{**}	0	0	9	.49	1.14	3.36^{**}	0	0	9
Average per year	2.53	1.89	.76*	2.2	0.	8.0	2.12	1.47	1.07^{**}	2.0	0.	6.0

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Table 2

Table 2 (continued)												
		Maste	r's progra	ms (N)	= 54)			Doct	oral prog	rams (N=	: 41)	
	Mean	SD	Skew	Media	in Min	Max^{a}	Mean	SD	Skew	Median	Min	Max ^a
Mixed/Miscellaneous												
Human factors	.48	1.26	2.69*) *	0	5	.41	1.20	3.20**	0	0	5
Consulting/business skills	1.44	2.11	1.09*) *	0	9	1.59	2.22	.98	0	0	9
Workforce diversity	1.02	1.73	1.49*;) *	0	5	1.10	1.81	1.57 **	0	0	9
Workforce aging	.17	.64	4.85*;) *	0	4	.22	.82	3.82**	0	0	4
Individual differences in the workplace	1.09	1.84	1.30^{*}	`` *	0	5	1.10	1.93	1.51**	0	0	9
Average per year	.84	<u>9</u> 6.	$I.12^{*:}$	* :	0.	3.6	.88	1.04	I.32**	9.	0.	4.0
Overall average per year	7.49	3.63	.79*	7.() 1.6	17.4	6.24	3.40	<i>I.33*</i> *	6.0	2.0	16.8
Excluding non-US and on-line only. $*p < .05$. ^a Response options capped at 6. ^b Combined comprehensive = general I-O and/ + half of general I-O	;, ** <i>p</i> < .01, /or (general	two-taileo I + genera	l il O) Gene	eral I aug	gmented	= general	I + half o	f general	I-O Gener	al O augm	ented = g	general O
Table 3												
Frequency of Substantive Courses Oj Departments	ffered in 1	the Past	5 Years	in Ma	sters a	nd Doct	oral Pro	grams	in Busin	ess/Man	agemen	ıt
		Master	's progra	≡ N) suu	= 5)			Docto	ral progra	ams $(N =$	10)	
Category/course	Mean	SD	Skew M	ledian	Min	Maxa	Mean	SD	Skew	Median	Min	Max ^a
General: observed	0	0	č			c		ļ		c		
General I-O (e.g., "Survey of I-O")	00 [.]	00.	.91	0	0	0	1.00	1.70	1.87*	0	0	5
General I (e.g., "Survey of I")	1.20	2.68	.91	0	0	9	.60	1.07	1.69*	0	0	c
General O (e.g., "Survey of O")	1.20	2.68	.91	0	0	9	2.10	2.02	.23	ŝ	0	S
Average per year	.48	1.07	2.24*	0.	0.	2.4	.74	.47	38	6.	0.	I.4
General: aggregated ^b												
Combined comprehensive	1.20	2.68	2.24*	0.	0.	6.0	1.70	2.00	.93	1.0	0.	5.0
General I augmented	1.20	2.68	2.24*	0.	0.	6.0	1.10	1.24	.53	Ś	0.	3.0
General O augmented	1.20	2.68	2.24*	0.	0.	6.0	2.60	1.87	04	2.8	0.	5.0

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General I augmented General O augmented

Table 3 (continued)												
		Maste	sr's prog	grams (N	= 5)			Docto	oral progra	ams (N=	10)	
	Mean	SD	Skew	Median	Min	Max ^a	Mean	SD	Skew	Median	Min	Max ^a
Industrial psychology												
Job analysis	.80	1.10	.91	0	0	0	.10	.32	3.16^{**}	0	0	-
Personnel recruitment/selection/placement	.80	1.10	.91	0	0	0	.70	1.16	1.26	0	0	m
Training and development	1.00	1.22	.91	-	0	m	.40	.84	1.78*	0	0	0
Performance appraisal	.60	86.	.91	0	0	0	.20	.63	3.16^{**}	0	0	0
Job evaluation/compensation	.80	1.10	.91	0	0	0	.40	.84	1.78*	0	0	0
Employment law	.80	1.10	.91	0	0	0	00 [.]	00.	00 [.]	0	0	0
Average per year	.96	1.07	.41	9.	0.	2.2	.36	.63	$I.82^{**}$	0.	0.	1.8
Organizational psychology												
Work motivation	.20	.45	.91	0	0		1.10	1.85	1.39	0	0	S
Work attitudes	.40	.55	.91	0	0	-	.30	.95	3.16^{**}	0	0	ŝ
Work groups/teams	1.00	1.22	.91		0	ŝ	.50	1.08	1.98*	0	0	ŝ
Leadership/management	3.20	2.39	.91	ŝ	-	9	1.10	1.73	1.58*	0	0	S
Judgment/decision making	1.40	1.52	.91	-	0	ŝ	00 [.]	00.	00 [.]	0	0	0
Organizational development	3.80	2.68	.91	S	-	9	00 [.]	00.	00 [.]	0	0	0
Organizational theory	4.00	2.74	.91	9	-	9	1.60	1.51	1.10	2	0	S
Work/family	00 [.]	00.	.91	0	0	0	00 [.]	00.	00 [.]	0	0	0
Work stress	00 [.]	00.	.91	0	0	0	00 [.]	00.	00 [.]	0	0	0
Average per year	2.80	1.17	.61	2.4	1.6	4.4	.92	.78	1.07	8.	0.	2.6
Mixed/miscellaneous				,	,						,	,
Human factors	.40	.55	.91	0	0	-	00.	00 [.]	00 [.]	0	0	0
Consulting/business skills	2.60	2.70	.91	-		9	00.	00.	00 [.]	0	0	0
Workforce diversity	1.00	2.24	.91	0	0	5	.10	.32	3.16^{**}	0	0	
Workforce aging	00 [.]	00.	.91	0	0	0	00 [.]	00.	00 [.]	0	0	0
Individual differences in the workplace	.20	.45	.91	0	0		.40	76.	2.66^{**}	0	0	m
Average per year	.84	.78	.81	9.	0.	2.0	0I.	.19	2.27**	0.	0.	9.
Overall average per year	5.08	2.59	1.45	4.6	2.4	9.4	2.12	1.22	.74	2.0	9.	4.6
Excluding non-US and on-line only. $*p < .05, *$	** <i>p</i> < .01	, two-tail	ed									

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^aResponse options capped at 6.

bCombined comprehensive = general I-O and/or (general I + general O) General I augmented = general I + half of general I-O General O augmented = general

more core I and, to a lesser extent, core O content courses than do businessmanagement departments, and (b) master's programs in business-management departments tend to offer more courses on select, mostly O-related, topics (e.g., organizational development, organizational theory, leadership/management). The requirement levels of substantive courses are examined next.

Notably, as is evident in the right-most column of Table A1, frequencies are significantly higher for "Required" courses in 17 of 26 cases (23 observed plus the 3 aggregated general courses). Findings for requirement level, accordingly, are somewhat redundant with those described above for course frequencies. Overall normative results for requirement levels of substantive courses are reported in Table A2 (online). The first column of data shows the number (and percentage) of programs offering each course at least once in the past 5 years (Part 1 of the question). The second column shows the number of programs indicating the requirement level per course (Part 2). The next three columns present the percentages of offering programs designating the given course at each of the three requirement levels. The last column is the product of the "% Required" and "N offered (%)" columns, yielding an estimate of the overall percentage of programs requiring the given course.² Results in Table A2 are noteworthy in several respects.

First, general I-O courses (combined and separate I and O) have the highest requirement rates: 76% to 85%, for the aggregated courses, suggesting a large majority of I-O programs require students to master broad I-O content in preparation for more specialized inquiry. Second, beyond that, no course exceeds an overall requirement rate of 42%, suggesting diversity across programs in the sorts of content I-O students are expected to master in earning their degrees. Third, the three most required specialized courses, overall, are I-related: personnel selection (41.2%), training (41.0%), and performance appraisal (33.8%). The next most required courses are leadership/management (29.2%), organizational theory (28.4%), organizational development (27.5%), and work motivation (26.9%). These results mirror those discussed earlier regarding course frequencies, showing relative emphasis on a smaller number of I-related courses compared to O-related courses. Overall, I and O content is fairly evenly balanced with respect to requirement levels.

Tables A3 and A4 present the 2 x 2 breakout for substantive course requirement levels. Small *Ns* in business/management programs preclude full 2-way analyses. Limited comparisons were made targeting the number of programs requiring versus not requiring a given course.³ The rightmost column of Table A3 contains χ^2 results for master's versus doctoral programs in psychology departments and the rightmost column of Table A4 for doctor-al programs in business/management versus psychology departments.

Results in Table A3 show that specialized courses in both I and O tend to be required more often in master's programs. For example, personnel

² Thus, included as not requiring a given course are programs not offering that course.

³ For example, 30.9% of psychology master's programs require job analysis (17 of 54 programs), which compares to 16.9% of psychology doctoral programs (7 of 41 programs).

recruitment/selection/placement is a required course in 56% of psychology master's programs, compared to 27% of psychology doctoral programs (ratio = 2.1:1). This trend is not too surprising, given the shorter timeline for a master's degree (typically 2 years compared to 5+ for the doctorate). Departmental comparisons for doctoral programs reveal few significant effects (right column of Table A4). Comprehensive coverage of I and O and general I coverage are more likely to be required in psychology-based programs (ratio = 1.7:1 in each case), whereas general O coverage is required about equally in the two department types. Job evaluation/compensation courses and organizational theory courses are more often required in business/management departments. We turn next to methods course offerings.

Norms for frequency of methods course offerings for all (US) programs are shown in Table 4. Basic research methods is offered most often (averaging 3.7 times over 5 years), followed by entry-level statistics courses (ANOVA and regression = 3.5 each), psychometrics (2.6), Aadvanced research methods (2.4), and multivariate analysis (2.4). Mean frequencies drop off notably after that, the remaining nine (of 15) courses accounting for < 30% of the methods course offerings. Averaging across programs, 5.1 methods courses are offered each year, which compares favorably to the benchmark of 6.6, noted above, for I and O substantive courses. Clearly, methods are a big part of I-O psychology graduate training in most programs.

Table 4

Frequency of Methods Courses Offered in the Past 5 Years for All Programs Combined (N = 115)

Course	Mean	SD	Skew	Median	Min	Max ^a
Basic research methods	3.71	2.11	92**	5	0	6
Advanced research methods	2.41	2.37	.11	2	0	6
ANOVA (1-way, 2-way, multi-way)	3.52	2.26	84**	5	0	6
Regression (simple, hierarchical)	3.50	2.26	80**	5	0	6
Multivariate analysis (e.g., MANOVA)	2.38	2.29	.11	3	0	6
Psychometrics	2.60	2.21	04	3	0	6
Test development	1.13	1.92	1.32**	0	0	6
Factor analysis (PCA, CFA)	1.43	2.18	1.00**	0	0	6
Item response theory	.54	1.34	2.63**	0	0	6
Generalizability theory	.23	.96	4.32**	0	0	5
Meta-analysis	.67	1.18	1.70**	0	0	5
Structural equation modeling	1.66	1.95	.72**	1	0	5
Hierarchical linear modeling	.83	1.49	1.80**	0	0	5
Nonparametric statistics	.36	1.27	3.47**	0	0	6
Qualitative/mixed methods	.44	1.25	2.91**	0	0	5
Average per year	5.08	2.84	.40	5.00	.20	13.00

Excluding non-US. *p < .05, **p < .01, two-tailed aResponse options capped at 6.

Tables 5 and 6 show the 2 x 2 breakout of methods course frequencies. Corresponding significance test results are reported in Table A5 (see also Figure A1). Key points include the following. First, methods courses tend to be offered

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Programs in Psychology Departments	Doctoral programs $(N = 40)$
requency of Methods Courses Offered in the Past 5 Years in Master's and Doctoral	Master's programs $(N = 53)$

Category/Course	Mean	SD	Skew	Median	Min	Max ^a	Mean	SD	Skew	Median	Min	Max ^a
Basic research methods	3.62	2.29	85*	5	0	9	3.75	1.98	-1.09**	5	0	9
Advanced research methods	2.53	2.44	.01	с	0	9	2.40	2.34	.10	0	0	5
ANOVA (one-way, two-way, multi-way)	3.36	2.38	66	5	0	9	4.20	1.83	-1.87**	5	0	9
Regression (simple, hierarchical)	3.25	2.41	55	5	0	9	4.30	1.73	-2.00**	5	0	9
Multivariate analysis (e.g., MANOVA)	1.87	2.32	.56	0	0	9	3.25	2.06	63	4	0	9
Psychometrics	2.58	2.36	00 ⁻	б	0	9	3.25	1.92	54	С	0	9
Test development	1.43	2.17	.98**	0	0	9	1.28	1.89	1.13^{**}	0	0	5
Factor analysis (PCA, CFA)	1.09	2.09	1.48^{**}	0	0	9	2.28	2.30	.21	0	0	9
Item response theory	.45	1.42	3.14**	0	0	9	.93	1.49	1.50^{**}	0	0	5
Generalizability theory	.32	1.16	3.52**	0	0	5	.23	.92	4.52**	0	0	5
Meta-analysis	.53	1.20	2.38**	0	0	5	.93	1.16	·98*	0	0	4
Structural equation modeling	89.	1.60	1.74^{**}	0	0	5	2.75	1.86	12	б	0	5
Hierarchical linear modeling	.30	.93	3.64**	0	0	5	1.45	1.71	1.03^{**}	1	0	5
Nonparametric statistics	.47	1.48	2.86**	0	0	5	.25	.95	4.13**	0	0	5
Qualitative/mixed methods	.32	1.07	3.72**	0	0	5	.28	96.	3.98**	0	0	5
Average per year	4.60	2.89	1.02^{**}	4.00	.80	13.0	6.30	2.44	.06	6.10	1.20	11.2
Excluding non-US and on-line only $*n < 05$ **	n < 01 to	vo-tailed										

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^aResponse options capped at 6.

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Table 6												
Frequency of Methods Courses Offered in	1 the Past	5 Yean	rs in Ma	aster 's a	nd Do	ctoral Pr	ograms i	n Busir	iess/Man	agement	Depai	tments
		Maste	sr's prog	grams (N	= 3)			Doct	oral progr	ams $(N =$: 10)	
Category/Course	Mean	SD	Skew	Median	Min	Max ^a	Mean	SD	Skew	Median	Min	Max ^a
Basic research methods	2.00	3.46	1.73	0	0	9	3.90	1.52	97	S	-	5
Advanced research methods	1.00	1.73	1.73	0	0	б	2.80	2.10	12	б	0	5
ANOVA (one-way, two-way, multi-way)	1.00	1.73	1.73	0	0	с	3.50	2.12	-1.00	5	0	5
Regression (simple, hierarchical)	1.67	1.15	1.73	1	-	б	3.80	2.10	-1.48	5	0	5
Multivariate analysis (e.g., MANOVA)	.33	.58	1.73	0	0	1	3.40	1.90	72	4	0	5
Psychometrics	1.00	1.73	1.73	0	0	б	1.30	1.83	1.08	0	0	5
Test development	1.00	1.73	1.73	0	0	б	00 [.]	00 [.]	00 ⁻	0	0	0
Factor analysis (PCA, CFA)	00 [.]	00 [.]	00 [.]	0	0	0	1.50	2.42	1.04	0	0	5
Item response theory	00 [.]	00 [.]	00 [.]	0	0	0	.10	.32	3.16^{**}	0	0	1
Generalizability theory	00 [.]	00 ⁻	00 [.]	0	0	0	00 [.]	00 [.]	00 [.]	0	0	0
Meta-analysis	00 [.]	00 [.]	00 [.]	0	0	0	1.20	1.40	.48	-	0	б
Structural equation modeling	00 [.]	00 [.]	00 [.]	0	0	0	3.20	1.81	51	Э	0	5
Hierarchical linear modeling	00 [.]	00 [.]	00 [.]	0	0	0	1.90	2.18	.48	-	0	5
Nonparametric statistics	00 [.]	00 [.]	00 [.]	0	0	0	00 [.]	00 [.]	00 [.]	0	0	0
Qualitative/mixed methods	1.00	1.73	1.73	0	0	б	1.50	2.12	1.00	0	0	5
Average per year	1.80	2.60	1.72	.40	.20	4.80	5.62	2.32	-1.33	6.50	1.00	8.00

Excluding non-US and on-line only. *p < .05, **p < .01, two-tailed

^aResponse options capped at 6.

more often in doctoral than in master's programs. Combining courses, the ratio is 1.4:1. Especially differentiating degree types are courses on hierarchical linear modeling (5.4:1), structural equation modeling (3.4:1), and multivariate analysis (1.8:1). Entry-level statistics courses (ANOVA, regression) are also more common in doctoral programs (1.3:1 in each case), as are factor analysis courses (one-tailed test; ratio = 2:1). That doctoral programs offer more methods courses is understandable given their greater focus on research. Notably, however, degree types are not significantly distinguished by the availability of basic and advanced research methods courses nor psychometrics. The balance in these relatively high-frequency courses suggests a shared methodological foundation for both degree types. Differences in methods course offerings are also evident between department types: Psychometrics and ANOVA courses are more commonly offered in psychology departments (ratios = 2.3:1 and 1.3:1, respectively). Courses on qualitative/mixed methods are more common in business/management departments (ratio = 4.6.1), although the frequencies in this case are modest: 1.4 vs. .3. No significant interactions between degree and department types emerged for methods course frequencies, possibly due in part to the notably low N of 3 in the business/management-master's cells.⁴

Requirement levels for methods courses are summarized in Table A6 for all programs. As with the substantive courses, the more frequently offered methods courses are more likely to be required (see right column of Table A5). Two exceptions are advanced research methods and hierarchical linear modeling courses, for which the mode is "Required as one of a limited set of options." The right column of Table A6 shows that basic research methods is required in 74% of I-O programs, followed by entry-level statistics courses (ANOVA = 67%, regression = 65%). Percentages drop below 50% for the remaining courses, suggesting diversity across programs in methods course requirements. Three tiers of required courses are evident: courses required by 40–50% of programs include psychometrics (47%), multivariate analysis (44%), and advanced research methods (44%); courses required by around 20% of programs include those on factor analysis and test development. More advanced specialized courses (e.g., structural equation modeling) are required by < 10% of programs, with meta-analysis at the bottom, required by only about 3% of programs.

Tables A7 and A8 present the 2 x 2 breakouts for methods course requirement levels. As with the substantive course data, presented above, small Ns in the business/management-master's cells preclude full 2 x 2 comparisons. The rightmost columns in Tables A7 and A8 show test results comparing degree types within psychology departments and department types within doctoral programs, respectively. In sum, (a) methods courses tend to be required more

⁴ A program offering no fundamental methods courses might be of concern to some readers. Extended analysis revealed that every (US) program has offered at least one of the first four methods courses at least once in the past 5 years. For three programs, the sum of the first four course frequencies = 1, and, in an additional two programs, the sum = 2. The four course frequencies combined average < 1/year in nine programs (8%).

often in (psychology) doctoral than in master's programs, (b) psychometrics and test development are more often required in psychology (doctoral) programs, and (c) basic research methods and select advanced statistics courses tend to be required more often in business/management (doctoral) programs.

SIOP Competencies

In 1985, SIOP's Education and Training Committee published a set of guidelines for doctoral-level training in I-O psychology, emphasizing a scientific–practitioner orientation in terms of competencies (older versions, e.g. 1974, used a multiple curricula model). Using a similar orientation and approach, the guidelines were updated in 1999 before being approved by APA. The 25 competency areas identified in the 1999 revision relied heavily on the 1985 guide-lines but with improvements in a number of areas most notably related to practice (e.g., the addition of consulting and business skills). The scope and specificity of the competencies afforded us a unique basis for benchmarking I-O graduate programs generally and for comparing different program types.

Norms for individual competencies offer specific comparisons. Broaderlevel comparisons were sought by subjecting the 25 competencies to principal components analysis ($N = 130^5$), with varimax rotation.⁶ Initial runs showed Consumer Behavior defining its own factor. The remaining 24 competencies yielded six interpretable components (minimum eigenvalue = 1.27), together accounting for 61.5% of the variance. The factors and their three strongest loading competencies are as follows (see Table A9 online for full PCA results): Factor 1 = Industrial Psychology (job/task analysis & classification; performance appraisal & feedback; personnel recruitment, Selection & Placement), Factor 2 = Organizational Psychology (consulting & business skills; organization development; leadership & management), Factor 3 = Methods (statistical methods/data analysis; research methods; attitude theory, measurement & change⁷), Factor 4 = Individuals/Teams (individual differences; individual assessment; small group theory & team processes), Factor 5 = General Psychology (history & systems; health & stress in organizations; fields of psychology), and Factor 6 = Applied Cognition (judgment & decision making; human performance/human factors; job evaluation & compensation). Table 7 presents norms for all programs combined, and Tables 8 and 9 for the 2 x 2 breakout. Corresponding significance test results are provided in Table A10 (online).

⁵ The subject-to-variable ratio of around 5:1 is less than ideal. Derived components are reasonably interpretable, nonetheless. As our aims are more descriptive than inferential, we cautiously advance the obtained structure here.

⁶ Oblique rotation (allowing factors to correlate) yielded similar results; max *r* between factors = .19 (Δ = 0).

⁷ As shown in Table A9, the latter competency crossloads this component (.49) and Factor 4 (.46). Neither loading is particularly definitive. We group it with statistics and research methods in organizing later results, given the stronger .49 loading and the relevance of this competency to measurement methods.

Table 7

SIOP Competency Focus ($N = 130$)						
PCA factor/Competency	Mean	SD	Skew	Median	Min	Max
Industrial Psychology						
Job/task analysis & classification	1.87	1.03	48*	2	0	3
Performance appraisal & feedback	2.19	.83	55*	2	0	3
Personnel recr't, selection, & placement	2.39	.91	-1.37**	3	0	3
Criterion theory & development	1.76	.97	43*	2	0	3
Training: theory, program design, & eval'n	2.17	.88	83**	2	0	3
Work motivation	2.20	.75	57**	2	0	3
Organizational Psychology						
Consulting & business skills	1.70	1.08	20	2	0	3
Organization development	1.69	1.06	05	2	0	3
Leadership & management	2.21	.86	79**	2	0	3
Ethical, legal & prof. contexts of I-O psych.	2.07	.86	59**	2	0	3
Organization theory	1.66	1.05	.00	1	0	3
Career development	1.06	.93	.52*	1	0	3
Methods						
Statistical methods/data analysis	2.68	.55	-1.62**	3	1	3
Research methods	2.67	.56	-1.53**	3	1	3
Attitude theory, measurement, & change	1.93	.86	38	2	0	3
Individuals/Teams						
Individual differences	1.95	.83	48*	2	0	3
Individual assessment	1.51	1.04	.05	1	0	3
Small group theory & team processes	2.04	.86	52*	2	0	3
General Psychology						
History & systems of psychology	.76	.76	.98**	1	0	3
Health & stress in organizations	1.32	.88	.28	1	0	3
Fields of psychology	1.03	.82	.46*	1	0	3
Applied Cognitive						
Judgment & decision making	1.21	.83	.50*	1	0	3
Human performance/human factors	1.02	1.01	.60**	1	0	3
Job evaluation & compensation	1.06	1.02	.57**	1	0	3
Excluded from PCA						
Consumer behavior	.23	.52	2.62**	0	0	3

0 = completely ignores, 1 = focuses somewhat, 2 = focuses moderately, 3 = focuses strongly Excluding non-US. *p < .05, **p < .01, two-tailed

Results in Table 7 reveal statistical Methods/Data Analysis and Research Methods to be the two most targeted competencies averaging across all programs (mean = 2.7 in each case). These are followed by personnel recruit-ment/selection/placement (2.4) and a mixed bag of core I and O topics (e.g., leadership/management, work motivation, performance appraisal; range = 1.7 to 2.2). Individual Assessment marks the halfway point on the 0-to-3 scale (mean = 1.5), and general topics (e.g., fields of psychology, history & systems) occupy lower ranks. Job evaluation & compensation ranks 20th (mean = 1.1), human performance/human factors ranks 23rd (mean = 1.0) and the mean for consumer behavior is very low (.2).

Table 8 SIOP Competency Focus in Master's and Doct	oral Progr	'ams in	Psycholog	ty Depa	irtmen	S.						
		Master	's program	N = N	56)			Doct	oral progra	ams $(N = $	41)	
PCA Factor/Competency	Mean	SD	Skew	Mediar	n Min	Max ^a	Mean	SD	Skew	Median	Min	Max ^a
Industrial Psychology												
Job/task analysis & classification	2.30	.83	-1.02**	ς	0	m	1.61	97	15	6	0	ŝ
Performance appraisal & feedback	2.45	.73	98**	ŝ		ŝ	1.93	.85	11	2	0	ŝ
Personnel recr't, selection, & placement	2.67	.61	-1.70**	ŝ		ŝ	2.24	66.	-1.16**	ŝ	0	ŝ
Criterion theory & development	1.87	.90	36	0	0	ŝ	1.88	.93	54	2	0	ŝ
Training: theory, program design, & eval'n	2.48	69.	-1.34**	ŝ	0	ŝ	1.86	.82	29	2	0	ŝ
Work motivation	2.22	.73	37	0		m	2.10	.73	57	0	0	б
Organizational Psychology												
Consulting & business skills	1.89	.87	29	0	0	ŝ	1.65	1.06	02	2	0	ŝ
Organization development	1.95	.98	25	0	0	m	1.22	1.06	.46		0	б
Leadership & management	2.14	.86	64	0	0	m	1.93	.88	55	7	0	m
Ethical, legal & prof. contexts of I-O psych.	2.25	.74	45	0		m	2.05	LL.	43	0	0	б
Organization theory	1.59	1.09	.02	-	0	m	1.34	66.	.55		0	б
Career development	1.16	66.	.37	-	0	ς	.85	.79	.59		0	б
Methods												
Statistical methods/data analysis	2.65	.54	-1.34**	З	-	m	2.73	.55	-1.99**	ŝ	1	б
Research methods	2.61	.62	-1.36**	ς	-	m	2.73	.45	-1.09**	ŝ	0	б
Attitude theory, measurement, & change	1.77	.91	25	7	0	\mathfrak{c}	1.90	.74	24	2	0	Э
Individuals/Teams												
Individual differences	1.93	.85	60	0	0	m	1.93	.91	49	0	0	б
Individual assessment	1.60	1.04	12	0	0	m	1.37	1.09	.30		0	m
Small group theory & team processes	1.86	.88	37	0	0	m	2.00	.84	54	0	0	б
General Psychology												
History & systems of psychology	69.	.68	.85**	-	0	С	.95	LL.	*6 <i>L</i> .		0	ŝ
Health & stress in organizations	1.29	.85	.32	-	0	С	1.49	98.	.04	-	0	С
Fields of psychology	.93	.76	.64	1	0	ŝ	1.22	88.	.24	-	0	ŝ

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Table 8												
		Master	's prograr	ns (N =	56)			Doctc	oral progra	n = N = N	41)	
PCA Factor/Competency	Mean	SD	Skew	Median	Min	Max^{a}	Mean	SD	Skew	Median	Min	Max ^a
Applied Cognitive												
Judgment & decision making	1.08	.76	.37	-	0	С	1.10	.86	.30	-	0	ŝ
Human performance/human factors	1.07	1.02	.48	-	0	m	.80	.84	99.		0	ŝ
Job evaluation & compensation	1.13	.97	.47	1	0	m	.64	.83	1.34^{**}	0	0	б
Excluded from PCA												
Consumer behavior	.29	.59	2.51**	0	0	С	.15	.36	2.08**	0	0	-
0 = completely ignores, $1 = $ focuses somewhat, $2 = $ fo	ocuses mod	erately,	3 = focuses	s strongly								
Excluding non-US and online only. $*p < .05$, $**p < .$	01, two-tai	led										
Table 9												
SIOP Competency Focus in Masters and Docto	ral Progr	ams in .	Psycholog	ty Depai	tment.	s.						
	D	Maste	r's progra	ms (N =	(9			Docto	oral progr	ams $(N =$	12)	
PCA Factor/Competency	Mean	SD	Skew	Median	Min	Max ^a	Mean	SD	Skew	Median	Min	Max ^a
Industrial Psychology												
Job/task analysis & classification	2.15	.76	21	0		m	98.	1.03	.61	1	0	m
Performance appraisal & feedback	2.70	.47	-1.05	б	0	б	1.78	.98	24	7	0	б
Personnel recr't, selection, & placement	2.74	.43	-1.36	m	0	m	1.78	1.07	06	0	0	ς
Criterion theory & development	1.46	.81	-1.50	0	0	0	1.37	.97	29	0	0	ς
Training: theory, program design, $\&$ eval'n	2.19	.75	43	0	-	б	1.27	1.15	.26		0	б
Work motivation	2.00	88.	00 [.]	0	-	б	2.35	LL.	80	б	1	б
Organizational Psychology												
Consulting & business skills	2.17	1.33	-1.21	c	0	С	.17	.39	2.06^{**}	0	0	-
Organization development	2.67	.82	-2.45*	ŝ		ŝ	.86	.58	46	1	0	0
Leadership & management	3.00	00 [.]	00 [.]	ŝ	m	m	2.60	.65	-1.59*	m	1	m
Ethical, legal & prof. contexts of I-O psych.	2.35	.81	97	ŝ		ŝ	1.25	97	.14	1	0	m
Organization theory	2.50	.55	00 [.]	ŝ	0	m	1.80	.94	30	0	0	m
Career development	1.18	96.	1.40		0	С	1.02	.74	08		0	0

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Table 9 (continued)												
		Master	's progra	ms (N =	(9			Docto	ral progra	ms (N =	2)	
PCA Factor/Competency	Mean	SD	Skew	Median	Min	Max ^a	Mean	SD	Skew	Median	Min	Max ^a
Methods												
Statistical methods/data analysis	2.45	.51	.17	7	0	ŝ	2.98	60.	-3.46**	ŝ	б	С
Research methods	1.95	.83	07	7	-	ŝ	2.97	60.	-3.46**	ŝ	m	З
Attitude theory, measurement, & change	1.98	90	.08	0	-	б	2.15	.72	19	ы		e
Individuals/Teams												
Individual differences	1.67	.82	.86	0	-	ŝ	1.82	.57	00 [.]	0	1	ŝ
Individual assessment	1.50	1.05	00 [.]	0	0	ŝ	.84	69.	04	1	0	0
Small group theory & team processes	2.50	.84	-1.54	С	-	ŝ	2.50	.52	00 [.]	ŝ	0	З
General Psychology												
History & systems of psychology	.46	.51	.10	0	0	-	.40	.50	.43	0	0	
Health & stress in organizations	1.33	.82	86	0	0	0	80.	.75	.02	1	0	0
Fields of psychology	1.00	.63	00 ⁻	-	0	0	.67	80.	1.73^{*}	1	0	ŝ
Applied Cognitive												
Judgment & decision making	2.20	.94	- 44	С	-	ŝ	1.28	.61	2.51^{**}	1	1	З
Human performance/human factors	1.50	1.05	00.	7	0	ŝ	.50	.91	2.19^{**}	0	0	З
Job evaluation & compensation	2.01	88.	.02	0	-	ŝ	1.01	1.04	.54	1	0	ŝ
Excluded from PCA												
Consumer behavior	.37	.49	.82	0	0		00 [.]	00 [.]	00 [.]	0	0	0
0 = completely ignores, 1 = focuses somewhat, 2 = fc Excluding non-US and online only. *p < .05, **p < .	cuses mode 01, two-taile	rately, 3 ed	= focuses	s strongly								

Results in Tables 8, 9, and A10 reveal several trends distinguishing program types on competency focus. Mean competency scores are plotted for the 2 x 2 breakout in Figure A2 (online) and competency factor scores in Figure A3 (online). Results show that (a) both I and O competencies tend to be rated higher in focus by master's programs, especially in business-management departments; whereas (b) methods competencies tend to be rated higher by doctoral programs, also especially in business-management departments; (c) general psychology competencies, not surprisingly, are a stronger focus in psychology departments, especially at the doctoral level; (d) applied cognition competencies (e.g., judgment & decision making) are a stronger focus both in business-management departments and in master's programs (additively); and (e) there are no meaningful differences across program types on individuals/teams competency focus.

Relationships Between Frequency of Course Offerings and Competency Focus

I-O courses and competencies target similar content, sharing similar labels. It should not be surprising that programs offering performance appraisal courses, for example, report focusing especially on competence in performance appraisal & feedback. Beyond expecting such linkages, we also sought to discover more subtle themes regarding how programs are identified in terms of courses and competencies. Table A11 reports correlations between course frequencies and competency factors.⁸ Also in Table A11 are point-biserial correlations with both the master's/doctoral and psychology/ business-management main effects. These are redundant with earlier ANOVA results but offer helpful insights here regarding patterns of course-competency linkages. A number of points bear noting.

First, not surprisingly, the I psychology competency component (Factor 1) correlates moderately positively with all the I-related course frequencies. With some exceptions (discussed below), the O psychology competency component (Factor 2) correlates meaningfully with key O-related courses; and the same holds, for the most part, for the methods competency component (Factor 3) and methods courses. We did not organize courses into clusters corresponding to the last three competency factors, but correlations are generally supportive here as well (e.g., frequency of job evaluation/compensation courses correlates .30 with the applied cognition competency component; frequency of work stress courses correlates .25 with the general psychology/health component). These findings generally support earlier interpretations. Other results in Table A11 offer more unique insights.

For one, despite being classified as O-related courses, both work motivation and work attitudes yielded very weak (*ns*) correlations with O psychology competency focus, correlating instead with I psychology focus. It may be that

⁸ Fully articulated correlations between specific courses and competencies are provided in Tables A12 and A13. Due to space constraints, we limit discussion here to results based on just the competency factors. Correlations among all specific course and competency variables are reported in Tables A23 to A26.

programs seeking to offer a balance of specialized I and O courses offer motivation and attitudes (over other O-related topics) because they share with the core I topics a focus on individual-level psychological concepts. Moving down the first two columns, we note negative correlations between each of consulting/business skills and workforce diversity, on the one hand, and I psychology competency focus (Factor 1), on the other, and positive relations with O psychology focus (Factor 2). Notably, the O psychology factor is loaded highest by consulting & business skills, suggesting a practice-based understanding of Factor 2. This is supported by negative relations between Factor 2 and the frequency of several methods course offerings (e.g., r = -.27 with regression) and by $r_{pb} = -.33$ with the master's/doctoral distinction (see bottom of Table A11). Factor 2, thus, may especially capture the "art" of I-O psychology practice.⁹

Moving to the right of Table A11, we see a string of positive relations between the general psychology/health competency component (Factor 5) and common methods course offerings (e.g., r = .28 with ANOVA). Given that such competencies are rated higher in psychology departments (note $r_{pb} = .34$ with Factor 5), we attribute the noted correlations to key methods courses being offered more often in psychology departments (see Tables 5, 6, and A5). Similarly, psychometrics course offerings correlate weakly with the methods competency component (Factor 3) but positively with the general psychology/health component (Factor 5). This may be due to psychometrics courses being offered more frequently in psychology departments, where general psychology courses are also more prevalent. That psychometrics is not linked more strongly to methods competency focus suggests the methodological nature of this course may be taken for granted. In addition, methods competency focus is identified more uniquely by offerings in other methodological domains (e.g., multivariate analysis).

"Top-10" Program Norms

Full norms for the three top-10 sets of programs (Gibby et al.'s doctoral, K&A's doctoral, and K&A's master's) are provided in Tables A14 to A22 (online) along with means (on appropriate variables) for relevant comparison groups and significance test results. Here, we summarize differences involving frequency of course offerings and competency focus. There are relatively few differences.

The Gibby et al. top-10 set (N = 9) yields no significant difference (p < .05, two-tailed) from other psychology doctoral programs (N = 32) on course frequency and competency focus.¹⁰ The K&A top-10 doctoral programs $(N = 5 \text{ psychology doctoral}^{11})$ differ from peer programs (N = 36) in the frequency of

⁹ This does not diminish the importance of theory, of course: Note prominent associations with organizational theory and leadership/management in both Tables A9 and A11.

¹⁰ One difference emerges at p < .10, two-tailed (i.e., qualitative/mixed methods courses are offered less frequently: 5-year mean = 0 vs. .4); but directionality permitting evaluation as p < .05, one-tailed, is not clearly justified.

¹¹ As per earlier articles in the series, additional KA top-10 PhD programs in "other" departments are excluded to avoid possible confounds in comparisons with peer programs. One KA top-10 MA program is excluded for the same reason.

offering courses on organizational theory (5-year mean = 0 vs. .9), work/family (1.2 vs. .3), basic research methods (5.0 vs. 3.6), and regression (5.0 vs. 4.2); and emphasis on competencies in career development (mean = .2 vs. .9), consumer behavior (0 vs. .2), and organizational theory (1.0 vs. 1.4). The K&A top-10 master's programs (N = 8 psychology Masters) show more prominent differences. Specifically, compared to peer programs (N = 46), they offer several I and O courses more frequently, including job analysis (5-year mean = 3.0 vs. 1.3), performance appraisal (4.4 vs. 2.7), personnel recruitment/selection/placement (4.8 vs. 2.9), work motivation (4.5 vs. 2.5), and work attitudes (3.6 vs. 1.5). Aggregating within categories, I-oriented courses are offered 1.6 times as often compared to peer programs, and O-oriented courses, 1.9 times as often. The ratio for all substantive courses combined is 1.5:1 (per year average = 10.5 vs. 7.0). No meaningful differences emerge in the frequency of methods course offerings or in competency focus. All told, comparisons involving the three top-10 program sets suggest that (a) the K&A top-10 master's programs tend to offer more I and O specialized courses relative to peer programs, and (b) the K&A top-10 doctoral programs tend to offer more courses in some domains and fewer in others.

Summary and Conclusions

There is a lot to digest from all the tables offered in this section, both in print and online. Here, we highlight just a few main trends. It is important to note that findings necessarily apply to the aggregate level. Exceptions to any trend are possible and we do not intend to paint all programs in a given category with the same broad brush. Findings are informative, nonetheless, at a general level.

First, psychology programs tend to offer more I and, to a lesser extent, more O content courses than do business-management programs. This holds with respect to both broad survey-type courses and more specialized offerings. An exception is organizational theory, especially relevant to business and management. Other courses (e.g., leadership/management) are offered in more balanced proportions. Business/management master's programs offer select O-related courses (e.g., organizational development) with notable frequency. Correspondingly, business-management doctoral programs report especially low frequencies of course offerings in both I and O domains (except organizational theory). Thus, students seeking balanced exposure to I and O content are more likely to find it in psychology-based programs. Those seeking a mostly O-related, "art-of-practice" focus might look to business/management master's programs.

A second trend is that methods courses and competencies tend to be definitive of psychology-based programs (both degrees) and business/management doctoral programs. Weaker methodological focus in business/management master's programs may reflect a more applied orientation. Students seeking basic or advanced grounding in I-O methods are less likely to find it in business-management master's programs. Those seeking advanced methodological training should consider doctoral programs in either department type, with businessmanagement programs demanding more of students on some specialized topics. Third, programs within broad types vary considerably in the courses they offer and require students to take in completing their degrees. Master's programs are more likely to require select courses than are doctoral programs, probably owing to tighter timelines. This suggests that master's programs may be more strongly defined by the courses they offer than are doctoral programs. The difference is akin to master's applicants choosing a particular type of restaurant (Italian, Indian, Mexican) with menu options limited to a single ethnicity versus doctoral applicants choosing from among different international smorgasbord venues, each offering similarly diverse, "all-you-can-eat" menus. This suggests that master's applicants have more to gain in maximizing fit with their chosen program by careful review of course offerings and requirements. Doctoral applicants should also seek a good fit, of course, but are afforded greater choice in courses over a longer graduate school timeline.

Fourth, the competency focus ratings largely mirror program comparisons based on course frequencies and requirement levels. Although showing some interesting twists, the first three competency factors permit interpretation as mostly I-, O-, and methods-related dimensions, the three domains most clearly definitive of I-O psychology. Drawing those components first shows their prominence as sources of variance among program identities. The latter three components permit more novel distinctions. The General Psychology/Health factor tends to mark psychology-based programs, and Applied Cognition, business-management-based programs; but, as orthogonal dimensions, each cuts across both department types to some extent. That the Individuals/Teams factor does not distinguish among program types suggests students seeking knowledge in related areas should not be constrained with respect to degree level and department type. How well the six-factor competency structure might further understanding of individual programs and the field of I-O psychology more broadly is a matter for ongoing consideration as survey results continue to be disseminated and discussed.

In the next issue of *TIP*, we turn our attention to survey results bearing on internships. In the meantime, we hope the curriculum and competency data offer grounds for fruitful discussion of the nature and scope of graduate education in I-O psychology.

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