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14. ABSTRACT This presentation, which was delivered to the Interagency Language Roundtable (ILR) Testing Committee on 22 MAR 2013, summarized four studies that provided evidence on the potential interchangeability of Defense Language Proficiency Test (DLPT) scores and Oral Proficiency Interview (OPI) ratings. The four studies addressed Briner and Rousseau's (2011) evidence-based approach to organizational decision-making. The first study was a meta-analytic review of the relationships among speaking, listening, and reading proficiency. Results indicated that, in general, listening and reading proficiency tests are not good proxies for speaking proficiency tests. The second and third studies explored whether DLPT listening (L) and reading (R) scores can be used as a proxy for determining OPI speaking proficiency ratings using two different samples. Findings indicated that neither the DLPT-L nor the DLPT-R are reliable or accurate predictors of OPI-S ratings. The fourth study explored Special Operations Forces (SOF) operators' perceptions of the DLPT and the OPI. Specifically, the study explored whether SOF operators perceive that either test provides job-relevant and accurate assessments of language proficiency. Results indicated that SOF operators perceive that OPI is more related to job performance than the DLPT. Overall, these studies provide evidence that the OPI should remain the test of record for SOF.					
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Presented to the Interagency Language Roundtable
Testing Committee, National Foreign Language Center,
College Park, MD.

Predicting Proficiency without Direct Assessment: Can Speaking Ratings be Inferred from Non- participatory Listening and Reading Ratings?



MARCH 2013

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RESEARCH CONDUCTED BY: SWA CONSULTING INC.



Predicting Proficiency without Direct Assessment: Can Speaking Ratings be Inferred from Non-participatory Listening and Reading Ratings?

March, 2013

Dr. Eric A. Surface
SWA Consulting Inc.



- Language proficiency testing can be costly
- Can language proficiency test scores from one modality be used to predict test scores in another?
 - **Specifically, can non-participatory listening and reading scores be used to infer speaking scores?**
- We used an evidence-based approach to explore the interchangeability of scores from two language proficiency tests:
 - **Defense Language Proficiency Test (DLPT)**
 - **Oral Proficiency Interview (OPI)**
- **Four studies providing evidence on the potential interchangeability of DLPT and OPI scores**

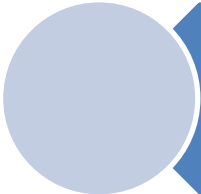
Evidence-based Decision-Making



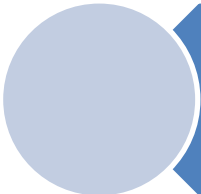
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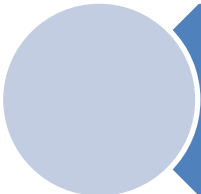
The evidence-based approach to organizational decision-making includes four types of evidence (Briner & Rousseau, 2011):



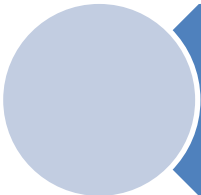
*Practitioner
expertise and judgment*



*Systematic review of
the best available research*



*Evidence from
the local context*



*Perspectives of
those who are affected*

Overview of Empirical Studies



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Study 1: Are speaking, listening, and reading proficiency scores related?

Systematic review of the best available research



Studies 2 and 3: Are DLPT and OPI proficiency scores related?

Evidence from the local context



Study 4: How do users react to the DLPT and OPI?

Perspectives of those who are affected

Overview of DLPT and OPI



- DLPT
 - Tests non-participatory listening and reading proficiencies
- OPI
 - Tests speaking proficiency
 - “Two-skill” version also assesses participatory listening proficiency
 - Preferred means of testing SOF language capability for speaking skills (USSOCOM M 350-8, 2009)

Study 1: Meta-Analytic Review



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- Based on the available empirical studies, what are the relationships among speaking, listening and reading proficiency scores?
- Meta-analysis Methodology (Hunter & Schmidt, 2004)
 - Reviewed 8,343 studies and 86 met our inclusion criteria
 - Military population
 - Adult expatriate population
 - Used Hunter and Schmidt's (2004) Random Effects Model
- Potential moderators:
 - Training characteristics
 - Setting, study purpose, language difficulty
 - Student characteristics
 - Age

Study 1 Results



Relationships between Speaking Proficiency and Non-participatory Listening/Reading Proficiency

Relationship	Speaking	
	k	r_{cor}
Non-participatory Listening	191	.67**
Reading	184	.58**

Note. ** = significant beyond .01. k = number of correlations included in the analysis. r_{cor} = corrected correlations.

Study 1 Results (cont.)



Relationships between OPI and DLPT Assessment Results

OPI-Speaking

Relationship	k	r_{cor}
DLPT-Listening	35	.59**
DLPT-Reading	38	.59**

Note. ** = significant beyond .01. k = number of correlations included in the analysis. r_{cor} = corrected correlations.

Study 2: AFSOC Study



- Can the DLPT listening and reading proficiency scores be used as a proxy for determining OPI speaking proficiency ratings?
 - Are the scores related?
 - Is there absolute agreement between the ratings?
- Sample
 - 58 language trainees from Air Force Special Operations Forces (AFSOF) who participated in:
 - Initial Acquisition Training ($n = 56$)
 - Sustainment Enhancement Training ($n = 2$)
 - Nine different languages represented

Study 2 Results



Correlations among DLPT (All Versions) and OPI Assessment Results

	DLPT-Listening	DLPT-Reading	OPI-Speaking
DLPT-Listening	--	31%	28%
DLPT-Reading	.76*	--	12%
OPI-Speaking	.66*	.49*	--

Note. $n = 58$. Lower diagonal presents zero-order correlations. Upper diagonal presents absolute agreement rates of ILR level (i.e., equal ratings across target assessments). * = $p < .01$.

Study 2 Results (cont.)



Absolute Agreement between DLPT and OPI Assessment ILR Level Results

<i>All DLPT Versions</i>	Absolute Agreement with OPI-S Ratings	
	No. of instances	Agreement rate
DLPT-Listening	16 (of 58)	28%
DLPT-Reading	7 (of 58)	12%
<i>DLPT Version 5 Only</i>		
DLPT-Listening	12 (of 40)	30%
DLPT-Reading	5 (of 40)	13%

Study 3: Army SOF



- Can the DLPT listening and reading proficiency results be used as a proxy for determining OPI speaking proficiency?
 - Are the scores related?
 - Is there absolute agreement between the ratings?
 - **Can DLPT ratings be used to predict OPI ratings?**
- Two Samples (50+ languages)
 - Sample 1: 3,040 United States Army (SOF and other MOS assigned to SOF)
 - Sample 2: 265 language Army SOF trainees

Study 3 Results



Correlations and Absolute Agreement between DLPT (All Versions)-Listening and Reading and OPI-Speaking

<i>Sample 1</i>	DLPT-Listening	DLPT-Reading	OPI
DLPT-Listening	--	34%	34%
DLPT-Reading	0.80*	--	24%
OPI	0.79*	0.77*	--

<i>Sample 2</i>	DLPT-Listening	DLPT-Reading	OPI
DLPT-Listening	--	37%	32%
DLPT-Reading	0.80*	--	25%
OPI	0.67*	0.59*	--

Note. Sample 1 $n = 3040$; Sample 2 $n = 265$. Lower diagonal for each sample presents zero-order correlations. Upper diagonal for each sample presents absolute agreement rates (i.e., equal ratings across target assessments). * = $p < .001$.

Study 3 Results (cont.)



Sample 2 – Comparison of Predicted to Actual OPI Ratings

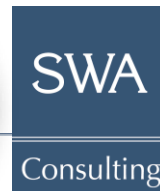
Actual OPI rating		Predicted OPI Rating (Weighted DLPT-L/R Composite)					Total
		0+	1	1+	2	2+	
0+	#	29	20				49
	% for row	59.2%	40.8%				--
1	#	42	32	11	6		91
	% for row	46.2%	35.2%	12.1%	6.6%		--
1+	#	9	28	17	12		66
	% for row	13.6%	42.4%	25.8%	18.2%		--
2	#		5	13	30		48
	% for row		10.4%	27.1%	62.5%		--
2+	#		3	2	6	0	11
	% for row		27.3%	18.2%	54.5%	0%	--
Total	#	80	88	43	54	0	265
	% for row	30.2%	33.2%	16.2%	20.4%	0.0%	--

Note. Overall correct classification percentage is **41%**.



- What are SOF operators' perceptions of the DLPT and the OPI?
 - Can affect motivation and attitudes toward that assessment
- Samples
 - 476 survey participants
 - 126 focus group participants (not presented here)

Study 4 Results



Survey Response Percentages

Item “Test is related to...”	DLPT		OPI	
	% Agree	% Disagree	% Agree	% Disagree
Deployment tasks ¹	13%	53%	32%	25%
Ability to use language on job ²	20%	48%	41%	20%
Language use in field ¹	35%	30%	49%	14%
Job/mission performance ¹	20%	45%	35%	22%

Note. ¹*n* = 460. ²*n* = 461. % Agree = percentage of participants who *Strongly Agree* or *Agree* combined. % Disagree = percentage of participants who *Strongly Disagree* or *Disagree* combined.

Study 4 Results (cont.)



Survey Comments about Test Content

Comments about content relevance to job/mission	Survey
<i>DLPT</i>¹	
DLPT content is unrelated to mission/job/military	59
Needs to include a speaking component	30
<i>OPI</i>²	
Should cover military related topics or be related to the mission	12
OPI was not relevant (wrong modality, etc)	4
Cannot use dialect	2

Note. Counts are from survey comments. ¹*n* = 282 total survey comments. ²*n* = 95 total survey comments.

Study 4 Results (cont.)



Survey Comments about Test Fairness

Test Fairness Survey Comments	Survey
DLPT¹	
DLPT is not an accurate/valid assessment (i.e., does not measure language proficiency)	28
DLPT is too difficult	12
Training does not match what is tested on the DLPT	11
DLPT is an accurate/valid assessment (i.e., measures language proficiency)	9
Not able to prepare for the test	3
Training matches what is tested on the DLPT	2
OPI²	
Good gauge of language proficiency/ability to communicate	22
Not effective for reading needs or not good replacement for DLPT	3

Note. Counts are from survey comments. ¹*n* = 282 total survey comments. ²*n* = 95 total survey comments.



- Preponderance of empirical and psychometric evidence suggests:
 - Ratings for different language modalities should **NOT** be used interchangeably
 - Ratings from one language modality should **NOT** be used to predict scores in other modalities for high stakes decisions

Overall Implications (cont.)



- DLPT-Listening and Reading results should **NOT** be used as proxies for OPI-Speaking ratings
 - There are only moderate relationships between speaking and non-participatory listening and speaking and reading test scores
 - The absolute agreement between ratings was poor
 - A weighted composite of DLPT ratings resulted in only a partially accurate prediction of OPI ratings

Overall Implications (cont.)



- Stakeholders perceived the OPI to be more related to job performance than the DLPT
 - SOF work analysis studies (not reported here) support that speaking and participatory listening are the most frequently used language skill modalities
- Policy, resources, training, testing and compensation must be aligned to produce the capability needed for success performance on missions and, therefore, mission success
- Given the current evidence, the OPI should be maintained as the test of record for SOF to ensure testing is aligned with capability requirements



- Identify solutions to lower costs of assessment without sacrificing reliability/validity, e.g.:
 - Technology-mediated assessment, such as ACTFL ILR OPIc®
- OPI was only perceived as marginally better than the DLPT by Operators and Leader—investigate other testing constructs such as performance- or capability-based assessments
- Be proponents of evidence-based decision-making pertaining to:
 - Foreign language testing policy (e.g., certification, skill-based pay, etc.)



Thank you. Questions?

Related Technical Report:

SWA Consulting Inc. (November, 2010). *Using the DLPT as a proxy for the OPI: Are reading and non-participatory listening scores a substitute for direct assessment of speaking proficiency?* (Technical Report #2010010624). Raleigh, NC: Author.

Conference Paper:

Watson, A. M., Harman, R. P., Surface, E. A., & McGinnis, J. L. (2012, April). Predicting proficiency without direct assessment: Can speaking ratings be inferred from listening and reading ratings? Paper presented at the 34th Language Testing Research Colloquium, Princeton, NJ.



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Study 1 Results (cont.)



Moderators of Relationships between Speaking Proficiency and Non-participatory Listening/Reading Proficiency

Relationship	Purpose		Setting		Age		Language Difficulty	
	r_{cor}	<i>Abs Diff</i>	r_{cor}	<i>Abs Diff</i>	k	β	k	β
Speaking – Non-part. Listening	.63	.04	.59	.08	41	.99**	91	-.51**
Speaking – Reading	.57	.01	.59	.01	49	.99**	80	-.91**

Note. ** = significant beyond .01. Purpose and Setting variables were statistically significant but not practically significant. r_{cor} = corrected correlation. *Abs Diff* = absolute difference between moderator relationships and overall relationship. k = number of correlations included in the analysis. β = Beta weight.

Study 1 Results (cont.)



Moderators of Relationships between OPI and DLPT Assessment Results

Relationship	Purpose		Setting		Age		Language Difficulty	
	r_{cor}	<i>Abs Diff</i>	r_{cor}	<i>Abs Diff</i>	k	β	k	β
OPI-Speaking – DLPT-Listening	-	-	-	-	4	.20	27	.96*
OPI-Speaking – DLPT-Reading	-	-	-	-	4	.32	27	.99*

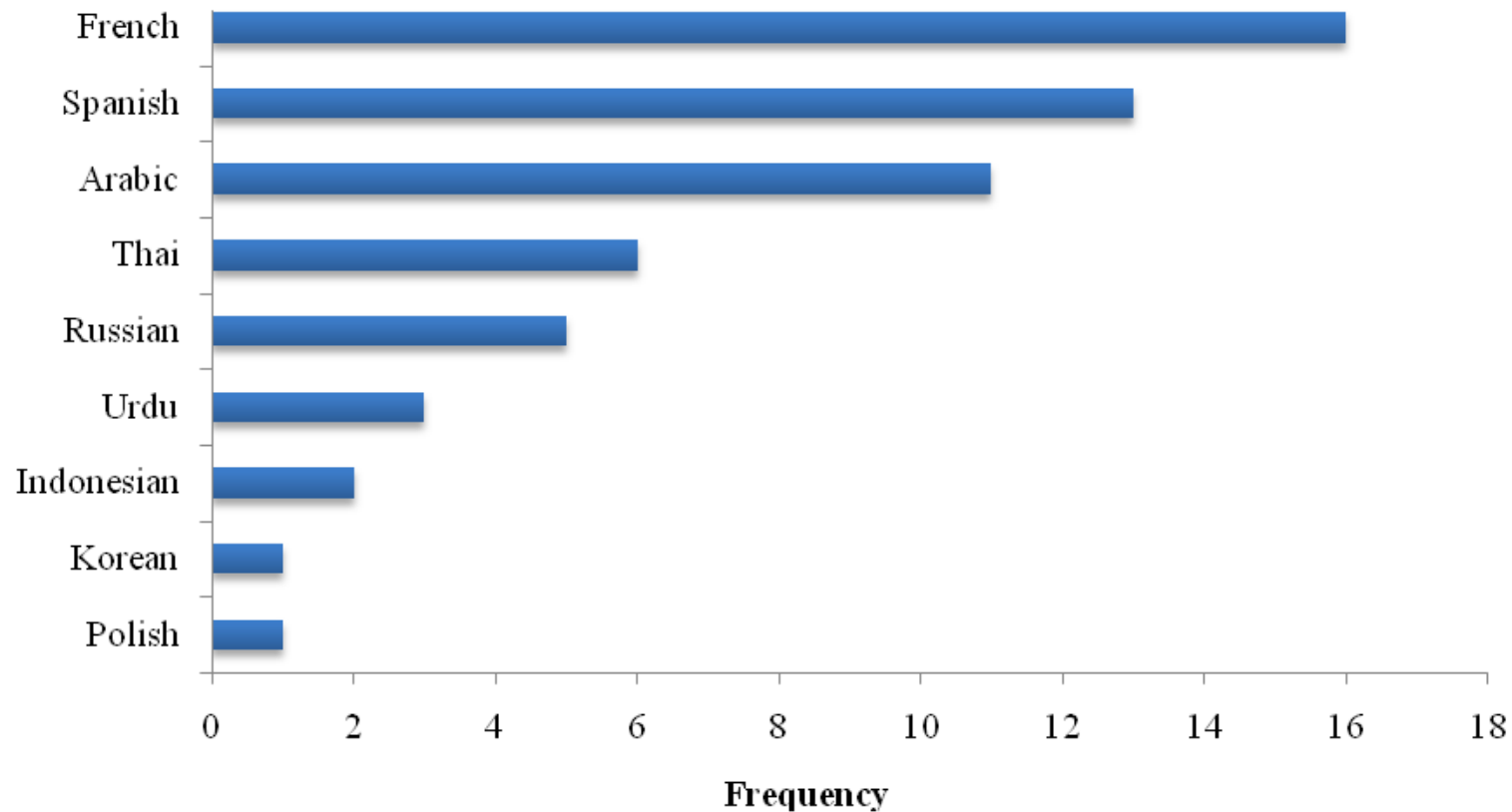
Note. * = significant beyond .05. Moderator analyses for purpose and setting were not conducted because all studies included were evaluation and military studies. k = number of correlations included in the analysis. β = Beta weight.

Study 2 Sample



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Enrollment Frequencies by Language ($n = 58$)



Study 2 Results



Cross Tabulation of DLPT (2, 4, & 5) Listening and OPI-S Proficiency Ratings

DLPT-L Rating		OPI-S Rating							Total
		0	0+	1	1+	2	2+	3	
0	Count	0	1	4				OPI > DLPT-L	5
	% within	0%	20.0%	80.0%				44.8%	100.0%
0+	Count		1	15	3				19
	% within		5.3%	78.9%	15.8%				100.0%
1	Count		1	10	3				14
	% within		7.1%	71.4%	21.4%				100.0%
1+	Count			4	3				7
	% within			57.1%	42.9%				100.0%
2	Count			2	1	2			5
	% within			40.0%	20.0%	40.0%			100.0%
2+	Count			1	2	4	0		7
	% within			14.3%	28.6%	57.1%	0%		100.0%
3	Count					1		0	1
	% within	DLPT-L > OPI				100.0%		0%	100.0%
Total	Count	0	3	36	12	7	0	0	58
	% within	.	5.2%	62.1%	12.0%	7.0%	.	.	100.0%

Study 2 Results (cont.)



Cross Tabulation of DLPT (2, 4, & 5) Reading and OPI-S Proficiency Ratings

DLPT-R Ratings		OPI-S Rating							Total
		0	0+	1	1+	2	2+	3	
0	Count	0	1	10	1			OPI > DLPT-R	12
	% within	0%	8.3%	83.3%	8.3%			43.1%	100.0%
0+	Count		1	7	3				11
	% within		9.1%	63.6%	27.3%				100.0%
1	Count		1	4	1				6
	% within		16.7%	66.7%	16.7%				100.0%
1+	Count			9	1	2			12
	% within			75.0%	8.3%	16.7%			100.0%
2	Count			2	4	1			7
	% within			28.6%	57.1%	14.3%			100.0%
2+	Count			3	2	1	0		6
	% within			50.0%	33.3%	16.7%	0%		100.0%
3	Count	DLPT-R > OPI		1		3		0	4
	% within	44.8%		25.0%		75.0%		0%	100.0%
Total	Count	0	3	36	12	7	0	0	58
	% within	.	5.2%	62.1%	20.7%	12.1%	.	.	100.0%

Study 3 Results



OPI Ratings and DLPT-L Ratings for Sample 1

DLPT-L Rating		One-skill OPI Rating								Total
		0	0+	1	1+	2	2+	3	3+	
0	Count	15	163	62						OPI > DLPT-L 22%
	% within row	6.3%	67.9%	25.8%						
0+	Count	14	226	268	23	3				534
	% within row	2.6%	42.3%	50.2%	4.3%	.6%				100.0%
1	Count		206	391	64	22				683
	% within row		30.2%	57.2%	9.4%	3.2%				100.0%
1+	Count		40	160	123	55	3			381
	% within row		10.5%	42.0%	32.3%	14.4%	.8%			100.0%
2	Count		4	78	252	226	6	2		568
	% within row		.7%	13.7%	44.4%	39.8%	1.1%	.4%		100.0%
2+	Count			17	97	263	30	4		411
	% within row			4.1%	23.6%	64.0%	7.3%	1.0%		100.0%
3	Count			2	30	116	41	31	3	223
	% within row			.9%	13.5%	52.0%	18.4%	13.9%	1.3%	100.0%
3+	Count								0	0
	% within row								0%	100.0%
Total		29	639	978	589	685	80	37	3	3040
		1.0%	21.0%	32.2%	19.4%	22.5%	2.6%	1.2%	.1%	100.0%

Study 3 Results (cont.)



OPI Ratings and DLPT-L Ratings for Sample 2

		Two-skill OPI Rating							Total
DLPT-L Rating		0	0+	1	1+	2	2+	3	
0	Count	0	9	14	2				25
	% within row	0%	36.0%	56.0%	8.0%				100.0%
0+	Count		26	38	12	1			77
	% within row		33.8%	49.4%	15.6%	1.3%			100.0%
1	Count		9	15	12	2			38
	% within row		23.7%	39.5%	31.6%	5.3%			100.0%
1+	Count		5	10	18	8	3		44
	% within row		11.4%	22.7%	40.9%	18.2%	6.8%		100.0%
2	Count			13	19	28	7		67
	% within row			19.4%	28.4%	41.8%	10.4%		100.0%
2+	Count			1	6	14	3		24
	% within row			4.2%	25.0%	58.3%	12.5%		100.0%
3	Count					3	1	0	4
	% within row					75%	25%	0%	100.0%
Total		0	49	91	69	56	14	0	279
		0%	17.6%	32.6%	24.7%	20.1%	5.0%	0%	100.0%

Study 3 Results (cont.)



OPI Ratings and DLPT-R Ratings for Sample 1

		One-skill OPI Rating								Total
DLPT-R Rating		0	0+	1	1+	2	2+	3	3+	
0	Count	8	58	13					OPI > DLPT-R	0
	% within row	10.1%	73.4%	16.5%					7%	100.0%
0+	Count	9	143	86	2					240
	% within row	3.8%	59.6%	35.8%	.8%					100.0%
1	Count	11	322	338	14	8				693
	% within row	1.6%	46.5%	48.8%	2.0%	1.2%				100.0%
1+	Count		92	233	71	20	1			417
	% within row		22.1%	55.9%	17.0%	4.8%	.2%			100.0%
2	Count		20	185	204	104	5			518
	% within row		3.9%	35.7%	39.4%	20.1%	1.0%			100.0%
2+	Count	1	3	102	201	257	17	5		586
	% within row	.2%	.5%	17.4%	34.3%	43.9%	2.9%	.9%		100.0%
3	Count		1	21	97	296	57	32	3	507
	% within row		.2%	4.1%	19.1%	58.4%	11.2%	6.3%	.6%	100.0%
3+	Count	DLPT-R > OPI							0	0
	% within row	69%							0%	100.0%
Total	Count	29	639	978	589	685	80	37	3	3040
	% within row	1.0%	21.0%	32.2%	19.4%	22.5%	2.6%	1.2%	.1%	100.0%

Study 3 Results (cont.)



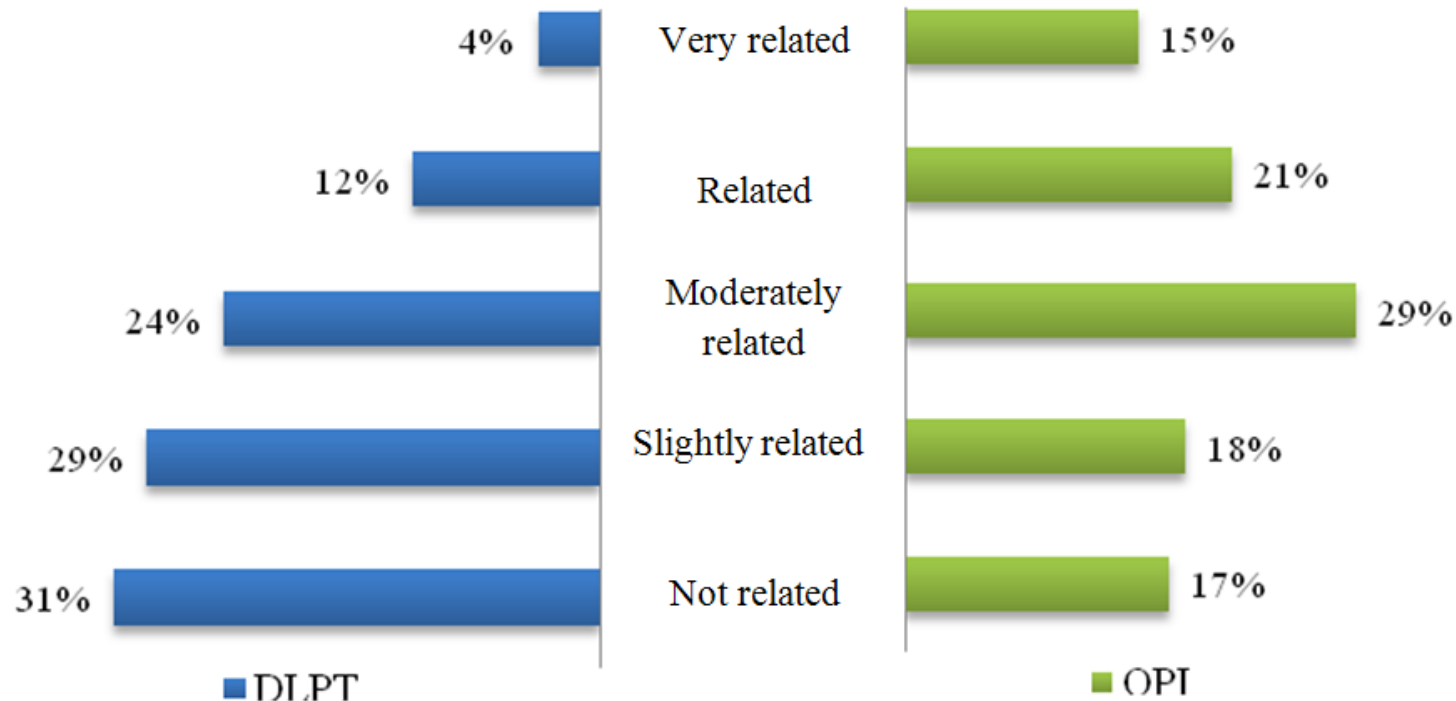
OPI Ratings and DLPT-R Ratings for Sample 2

DLPT-R Rating		Two-skill OPI Rating						Total
		0	0+	1	1+	2	2+	3
0	Count	0	8	6	1			OPI > DLPT-R
	% within row	0%	53.3%	40.0%	6.7%			23%
0+	Count		13	22	4			
	% within row		33.3%	56.4%	10.3%			
1	Count		13	18	7	3	2	
	% within row		30.2%	41.9%	16.3%	7.0%	4.7%	
1+	Count		14	21	18	4		
	% within row		24.6%	36.8%	31.6%	7.0%		
2	Count		1	17	22	13	4	
	% within row		1.8%	29.8%	38.6%	22.8%	7.0%	
2+	Count			5	11	21	3	
	% within row			12.5%	27.5%	52.5%	7.5%	
3	Count	DLPT-R > OPI		2	3	7	2	0
	% within row	52%		14.3%	21.4%	50.0%	14.3%	0%
Total	Count	0	49	91	66	48	11	0
	% within row	0%	18.5%	34.3%	24.9%	18.1%	4.2%	0%

Study 4 Results



Survey Responses



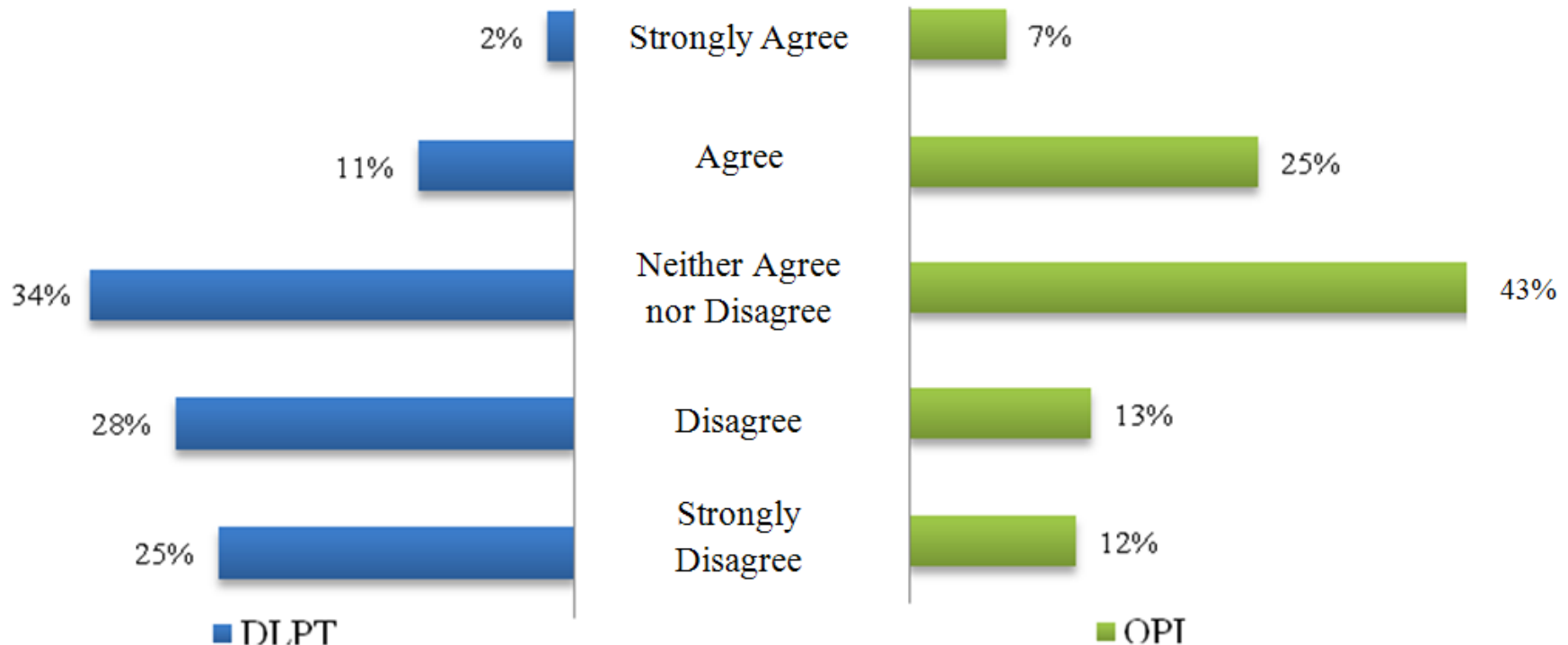
How related is the [DLPT/OPI] to what you do on the job?

Note. DLPT: $n = 471$, $M = 2.28$; OPI: $n = 471$, $M = 3.00$. Responses are on a 5-point scale. 1= *Not related*, 2= *Slightly related*, 3= *Moderately related*, 4= *Related*, 5= *Very related*. Statistically significant difference, $t(470) = -11.16$, $p < .01$.

Study 4 Results (cont.)



Survey Responses



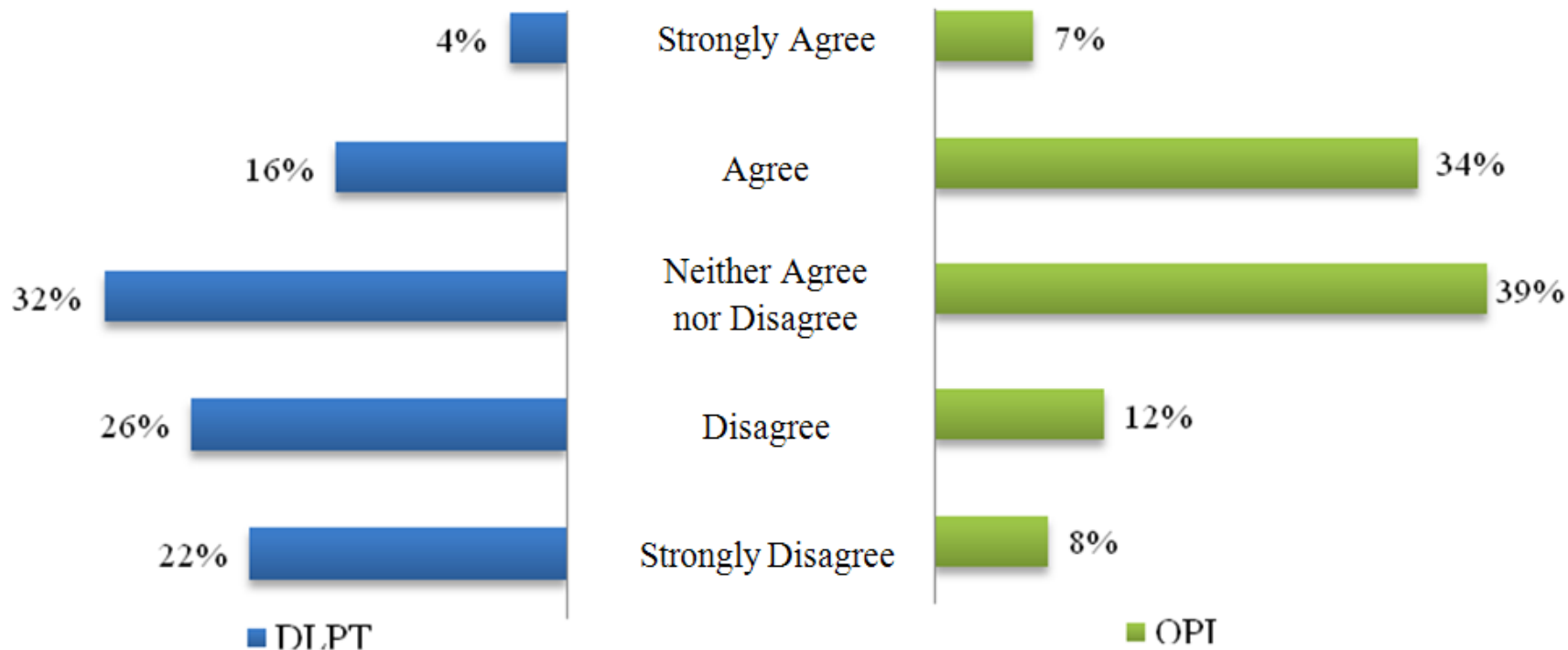
The content of the [DLPT/OPI] is clearly related to what I do during deployment.

Note. DLPT: $n = 460$, $M = 2.39$; OPI: $n = 460$, $M = 3.00$. Responses are on a 5-point scale. 1= *Strongly disagree*, 2= *Disagree*, 3= *Neither agree nor disagree*, 4= *Agree*, 5= *Strongly Agree*. Statistically significant difference, $t(459) = -11.28$, $p < .01$.

Study 4 Results (cont.)



Survey Responses



My [DLPT/OPI] ratings accurately reflect my ability to use language while on the job.

Note. DLPT: $n = 461$, $M = 2.55$; OPI: $n = 461$, $M = 3.19$. Responses are on a 5-point scale. 1= *Strongly disagree*, 2= *Disagree*, 3= *Neither agree nor disagree*, 4= *Agree*, 5= *Strongly Agree*. Statistically significant difference, $t(460) = -10.69$, $p < .01$.