FACULTY OF PSYCHOLOGY AND EDUCATIONAL SCIENCES

DEPARTMENT OF DEVELOPMENTAL, PERSONALITY AND SOCIAL PSYCHOLOGY
RESEARCH GROUP PERSONALITY AND INDIVIDUAL DIFFERENCES

TOWARDS AN EVIDENCE-BASED RECRUITMENT AND SELECTION PROCESS

Filip De Fruyt – IVAP-EIPA meeting – Vitoria Gasteiz – April 11, 2019

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OUTLINE

- The 21st century challenge
- Competencies/Social-emotional Skills/Talent
- Selection assessment practice today
- Evidence-based human resources
- How to get there?

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- *The 21st century challenge*
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SOME CONTEXT: THE VUCA WORLD?

















AT THE SAME TIME … “PERFECT” CULTURE

















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VUCA? …. different twist

Extra challenges:

- ICT-literacy, but also financial literacy
- World market (vb. Buying behavior, …)
- Languages
- Speed of information exchange
- Longer careers
- longevity
- ….

Challenges for public administrations:

- Customer model
- Rules and legislation
- ICT …

…., but also opportunities!

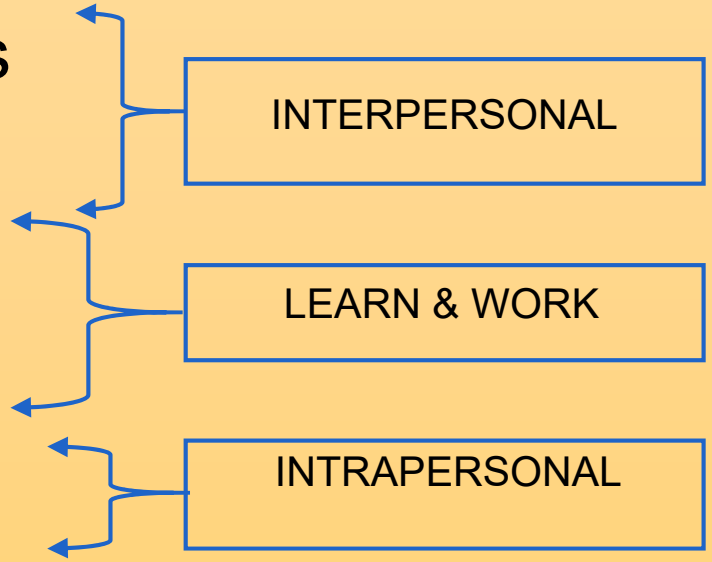
VUCA world? → equipped to adapt

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GENETICALLY AND EVOLUTIONARY EQUIPPED TO DEAL WITH CHALLENGES?

5 psycho-social functions:

- Living together/work with others
- Lead/follow – status hierarchy
- Start/act - Standards
- Conserve and explore
- Deal with frustration/setbacks



FIVE PSYCHOSOCIAL SYSTEMS AND SKILLS FOR LIVING (DE FRUYT & JOHN, IN PREPARATION; JOHN, 2015)

- Living together – work with others
- Lead/follow – status hierarchy
- Start/Act – standards
- Conserve and explore
- Deal with frustration/setbacks

A*greeableness*: **Belonging**
  – Close bonds/social support

E*xtraversion*: **Approach**
  – Rewards/gains

C*onscientiousness*: **Self-regulation**
  – Standards

O*penness*: **Exploration**
  – Interests

N*egative Affect vs Emotional stability*: **Coping**
  – Adversity: Failures/losses/punishments

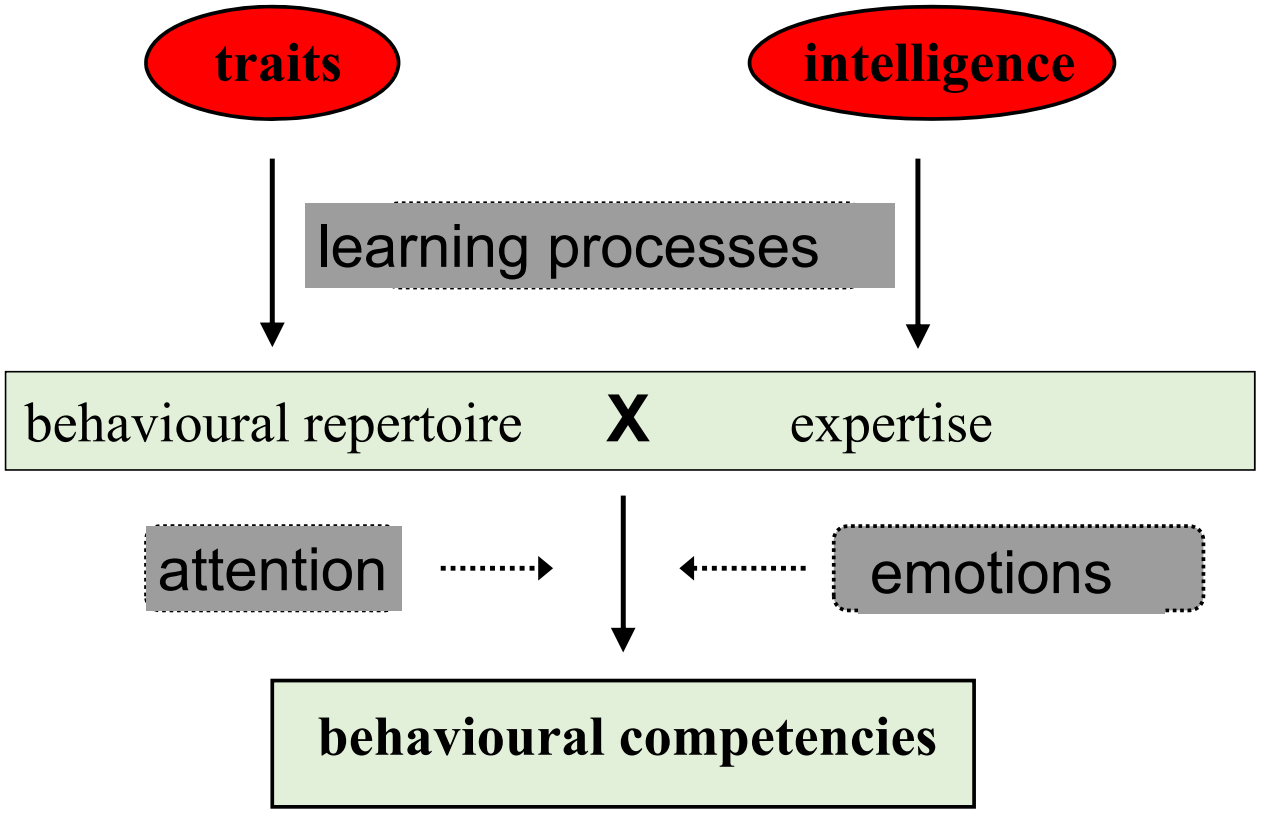
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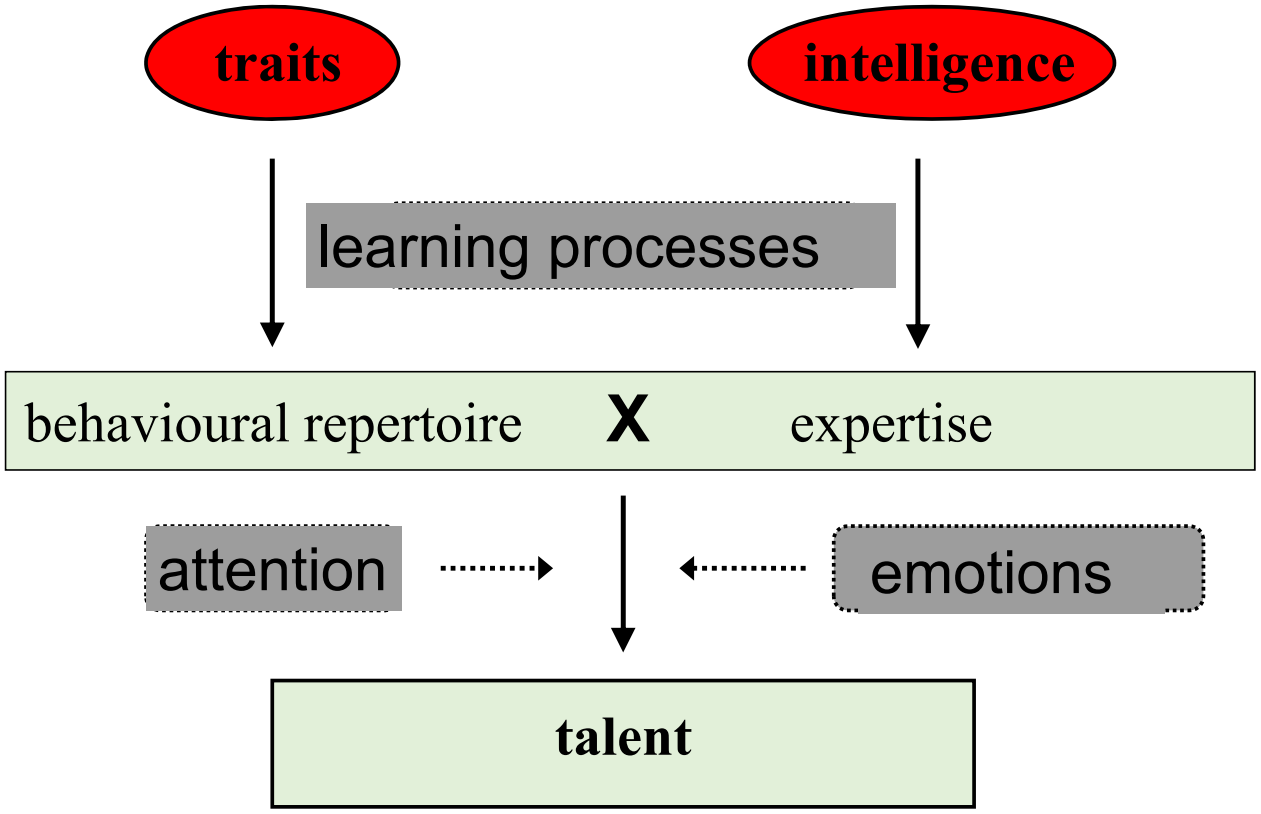
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TRAITS AND COMPETENCIES/PROBLEM BEHAVIORS (HOEKSTRA, 2007)



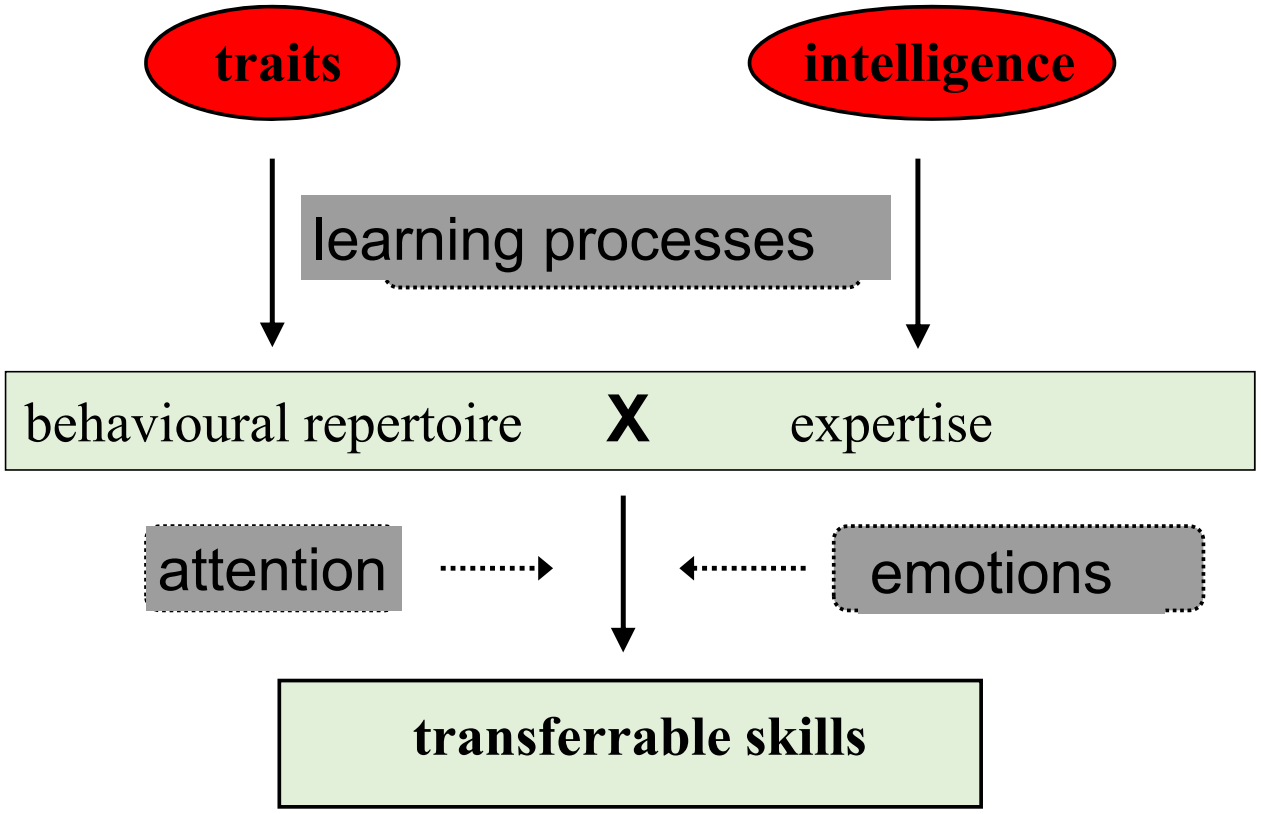
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TRAITS AND COMPETENCIES/PROBLEM BEHAVIORS (HOEKSTRA, 2007)



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TRAITS AND COMPETENCIES/PROBLEM BEHAVIORS (HOEKSTRA, 2007)



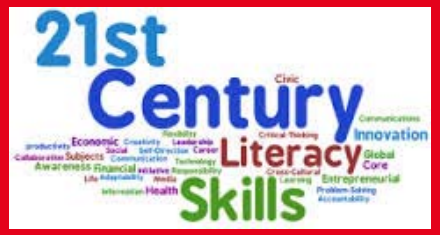
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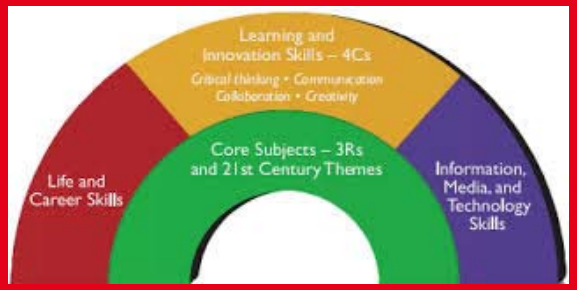
EXAMPLES OF TRANSFERRABLE SKILLS

- Planning and arranging events and activities
- Delegating responsibility
- Motivating others
- Attending to visual detail
- Assessing and evaluating your own work
- Assessing and evaluating others' work
- Dealing with obstacles and crises
- Multitasking
- Presenting written material
- Presenting material orally
- Managing time
- Repairing equipment or machinery
- Coordinating fundraising activities
- Coaching
- Researching
- Building or constructing things
- Managing finances
- Speaking a foreign language
- Utilizing computer software (specify programs)
- Training or teaching others

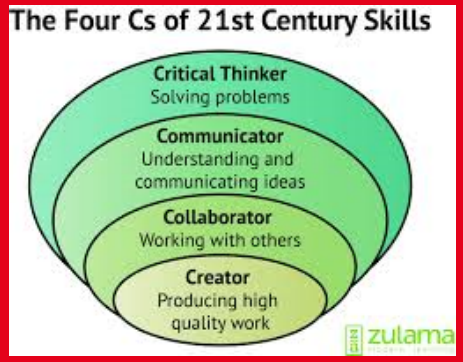
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EDUCATION: A LOT … OFTEN BOTTOM-UP GENERATED

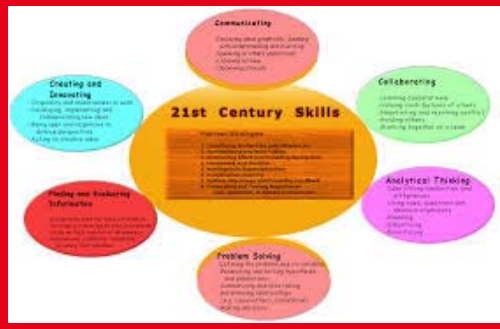












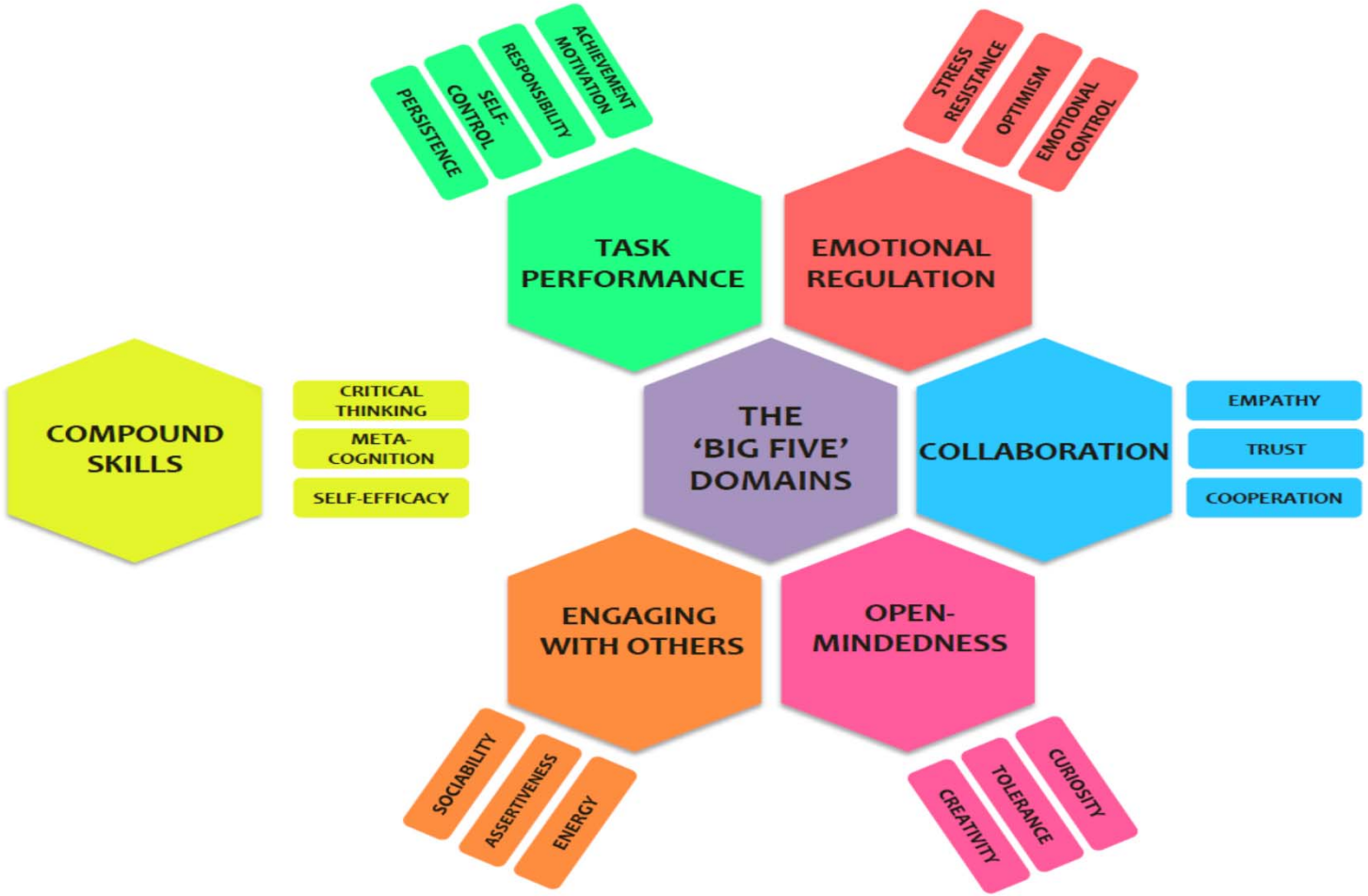




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OECD MODEL (2018; JOHN & DE FRUYT, 2015)

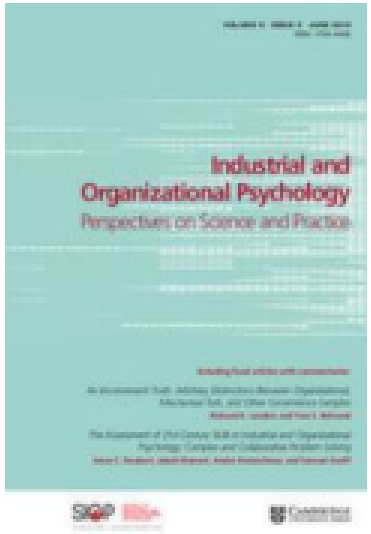


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Employability in the 21st Century: Complex (Interactive) Problem Solving and Other Essential Skills

Filip De Fruyt, Bart Wille and Oliver P. John

Industrial and Organizational Psychology / Volume 8 / Issue 02 / June 2015, pp 276 - 281
DOI: 10.1017/iop.2015.33, Published online: 28 July 2015

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“EMPLOYABILITY” (DE FRUYT, WILLE & JOHN, 2015)

Defined as whether a person:

- Demonstrates task-engagement and goal-setting:
- Can get along with other people:
- Adapts to/fits in an organizational structure:
- Learns on the job/future challenges:
- Able to deal with time perspective:

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"EMPLOYABILITY" (DE FRUYT, WILLE & JOHN, 2015)

Defined as whether a person:

- Demonstrates task-engagement and goal-setting: **C**
- Can get along with other people: **E X A - N**
- Adapts to/fits in an organizational structure: **A x N**
- Learns on the job/future challenges: **O x C**
- Able to deal with time perspective: **O x C**

Openness
Conscientiousness
Extraversion
Agreeableness
Neuroticism

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RECRUITMENT & SELECTION ASSESSMENT PRACTICE TODAY

- Key problem: Attract! (ASA – ASTMA): attraction – selection – transformation – manipulation – attrition
- Function (competencies) → Employability (talent)
- “The sheep with five legs”: Double loss
- Homogeneity (culture): → Common core + Heterogeneity
- External → Internal recruitment
- Select: → SELECT and DEVELOP --‘Development is the new selection’
- Individual: → Team

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BASICS OF ASSESSMENT

- What we want: ‘select-in’
- What we do not want: ‘select-out’
- Evidence-based: what constructs do we need?
- Evidence-based: psychometrics: reliability & validity
- Aggregation and triangulation
- Incremental validity of assessment indicators

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SELECTION TOOLS

- Formal training
- Resume

- Interview: (un)structured
- Personality assessment
- Cognitive assessment
- Assessment Center Exercises
- Others: interests, values, neuropsych, languages, …
- Exams (government, licensing, …)

- Online, unproctered, …

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“WORDS & WORDS”: … AT THE OPERATIONAL LEVEL

The Validity and Utility of Selection Methods in Personnel Psychology: Practical and Theoretical Implications of 100 Years…

Working Paper · October 2016

DOI: 10.13140/RG.2.2.18843.26400

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SCHMIDT, OH, & SHAFFER (2016) RESEARCH GATE

Table 1

Operational Validity for Overall Job Performance of General Mental Ability (GMA) Combined with a Second Supplementary Predictor Using Multiple Regression

Selection procedures/predictors	Operational validity (r)	Multiple R	Gain in validity (ΔR)	% gain in validity	Standardized regression weights	
					GMA	Supplement
1. GMA tests [a]	.65					
2. Integrity tests [b]	.46	.78	.130	20%	.63	.43
3. Employment interviews (structured) [c]	.58	.76	.117	18%	.52	.43
4. Employment interviews (unstructured) [d]	.58	.73	.087	13%	.49	.38
5. Interests [e]	.31	.71	.062	10%	.64	.29
6. Phone-based interviews (structured) [f]	.46	.70	.057	9%	.56	.29
7. Conscientiousness [g]	.22	.70	.053	8%	.67	.27
8. Reference checks [h]	.26	.70	.050	8%	.65	.26
9. Openness to Experience [i]	.04	.69	.039	6%	.74	-.25
10. Biographical data [j]	.35	.68	.036	6%	.90	-.34
11. Job experience (years) [k]	.16	.68	.032	5%	.66	.21
12. Personality-based EI [l]	.32	.68	.029	5%	.61	.20
13. Person-organization fit [m]	.13	.67	.024	4%	.66	.18
14. SJT (knowledge) [n]	.26	.66	.015	2%	.75	-.17
15. Person-job fit [o]	.18	.66	.014	2%	.64	.13
16. Assessment centers [p]	.36	.66	.013	2%	.78	-.18

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Table 1

Operational Validity for Overall Job Performance of General Mental Ability (GMA) Combined with a Second Supplementary Predictor Using Multiple Regression

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16. Assessment centers [p]	.36	.66	.013	2%	.78	-.18
17. T & E point method [q]	.11	.66	.009	1%	.65	.11
18. Grade point average [r]	.34	.66	.009	1%	.74	-.14
19. Years of education [s]	.10	.65	.008	1%	.65	.10
20. Extraversion [t]	.09	.65	.006	1%	.65	.09
21. Peer ratings [u]	.49	.65	.006	1%	.57	.12
22. Ability-based EI [v]	.23	.65	.004	0%	.68	-.08
23. Agreeableness [w]	.08	.65	.002	0%	.64	.05
24. Work sample tests [x]	.33	.65	.002	0%	.68	-.06
25. SJT (behavioral tendency) [y]	.26	.65	.001	0%	.64	.03
26. Emotional Stability [z]	.12	.65	.000	0%	.64	.02
27. Graphology [aa]	.02	.65	.000	0%	.65	.02
28. Job tryout procedure [ab]	.44	.65	.000	0%	.63	.02
29. Behavioral consistency method [ac]	.45	.65	.000	0%	.64	.02
30. Job knowledge tests [ad]	.48	.65	.000	0%	.65	-.01
31. Age [ae]	.00	.65	.000	0%	.65	.01

Note. EI = emotional intelligence; SJT = situational judgment tests; T & E = training and experience; In the Table notes, k = the number of studies a meta-analysis is based on.

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Table 2

Operational Validity for Training Performance of General Mental Ability (GMA) Combined with a Second Supplementary Predictor Using Multiple Regression

Selection procedures/predictors	Operational validity (r)	Multiple R	Gain in validity (ΔR)	% gain in validity	Standardized Regression weights	
					GMA	Supple-ment
1. GMA tests [a]	.67					
2. Integrity tests [b]	.43	.78	.109	16%	.65	.40
3. Biographical data [c]	.30	.74	.073	11%	1.04	-.50
4. Employment interviews (unstructured) [d]	.56	.74	.070	11%	.53	.35
5. Interests [e]	.34	.74	.070	11%	.66	.31
6. Conscientiousness [f]	.25	.73	.061	9%	.69	.29
7. Reference checks [g]	.23	.71	.038	6%	.67	.23
8. Employment interviews (structured) [h]	.41	.70	.034	5%	.60	.23
9. Years of education [i]	.20	.70	.029	4%	.67	.20
10. Extraversion [j]	.17	.69	.021	3%	.67	.17
11. Assessment centers [k]	.37	.68	.014	2%	.81	-.20
12. Peer ratings [l]	.36	.68	.008	1%	.76	-.13
13. Agreeableness [m]	.13	.67	.007	1%	.66	.10
14. Emotional Stability [n]	.14	.67	.001	0%	.66	.03
15. Openness to Experience [o]	.24	.67	.000	0%	.67	-.02
16. Job experience (years) [p]	.00	.67	.000	0%	.67	.01

Note. Selection procedures are listed in the order of gain in operational validity. All values in the third column of Table 2 are operational validities for training performance. Unless otherwise noted, all operational validity estimates are corrected for measurement error in the criterion measure and indirect range restriction (IRR) on the predictor measure to estimate operational validity for applicant populations. Details on these operational validities are reported in the Table footnotes. The correlations between GMA and supplementary predictors (used to compute multiple Rs, gain in validity, and standardized regression weights) are corrected for IRR on GMA but not for measurement error in either measure; these correlations indicate unrestricted observed correlations between the two predictors in applicant populations. Details on these correlations are reported in the Table 1 footnotes.

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Table 4. Meta-analysis of General Mental Ability-Occupation Combinations for Predicting Job Performance Ratings.
(Salgado, Anderson, Moscoso, Bertua, De Fruyt, & Rolland, 2003)

Source	K	N	r	S^2r	SDr	%VE	S^2e	Rho	SDrho	90%CV	LRHO	NSD	LCV
Driver	5	394	.22	.025	.159	64	.012	.45	.191	.21	.40	.225	.11
Electrical Ass.	3	280	.28	.023	.150	65	.009	.54	.171	.32	.45	.215	.17
Inform. Clerk	5	890	.31	.006	.081	100	.005	.61	.000	.61	.56	.175	.33
Engineer	9	837	.23	.014	.118	100	.010	.63	.000	.63	.57	.181	.34
Manager	6	783	.25	.039	.197	40	.007	.67	.407	.15	.61	.433	.06
Police	5	619	.12	.015	.121	31	.007	.24	.151	.05	.22	.159	.01
Sales	5	394	.34	.018	.133	100	.010	.66	.000	.66	.60	.189	.36
Skilled Worker	7	994	.28	.002	.045	100	.006	.55	.000	.55	.51	.161	.30
Typing	23	1870	.23	.032	.179	47	.011	.45	.256	.12	.41	.276	.05

Note. K=number of studies, N=total sample; r=observed mean validity; S^2r=observed variance; S^2e=sampling error variance; SDr= observed standard deviation; Rho=operational validity; SDrho=standard deviation of the operational validity; %VE= variance accounted for by artifactual errors; 90%CV=credibility value; LRHO= lowest (hypothetical) rho; NSD= hypothetical standard deviation of LRHO; LCV= lowest (hypothetical) credibility value.

Table 5. Meta-analysis of General Mental Ability-Occupations Combinations for Predicting Training Success.
(Salgado, Anderson, Moscoso, Bertua, De Fruyt, & Rolland, 2003)

Category	N	K	r	S^2r	SDr	%VE	S^2e	Rho	SDrho	90%CV	LRHO	NSD	LCV
Apprentice	9	1229	.26	.010	.101	84	.006	.49	.075	.39	.45	.158.	24
Chemical	4	1514	.28	.003	.051	100	.002	.72	.000	.72	.65	.206	.39
Driver	9	2252	.26	.006	.077	72	.003	.40	.062	.32	.36	.129	.20
Electrical Ass.	4	353	.35	.017	.131	73	.009	.63	.121	.48	.57	.214	.30
Information	4	579	.46	.002	.041	100	.004	.69	.000	.69	.63	.198	.37
Engineer	8	1051	.28	.013	.115	100	.006	.74	.000	.74	.65	.207	.39
Mechanics	4	549	.21	.010	.100	82	.007	.40	.079	.29	.36	.137	.19
Police	3	392	.13	.026	.162	31	.007	.25	.255	-.07	.23	.253	-.10
Skilled Worker	12	2276	.17	.012	.108	47	.005	.27	.121	.12	.25	.139	.07
Typing	12	1651	.31	.029	.171	31	.006	.57	.259	.24	.52	.296	.14

Note. K=number of studies, N=total sample; r=observed mean validity; S^2r=observed variance; S^2e=sampling error variance; SDr= observed standard deviation; Rho=operational validity; SDrho=standard deviation of the operational validity; %VE= variance accounted for by artifactual errors; 90%CV=credibility value; LRHO= lowest (hypothetical) rho; NSD= hypothetical standard deviation of LRHO; LCV= lowest (hypothetical) credibility value.

JUDGE ET AL. (1999): PREDICTIVE VALIDITY OVER THE LIFE SPAN (EXTRINSIC CAREER SUCCESS)

Individual difference	r	beta	R/R^2
Childhood N	-.34**	-.21*	
Childhood E	.18	.27*	
Childhood O	.26*	-.02*	
Childhood A	.01	-.32**	
Childhood C	.41**	.44**	
R			54**
Delta R^2			13**
Childhood G	.53**	.41**	
R			53**
Delta R^2			12*
R (traits + G)			.64**

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HOW TO GET THERE?

- Define required talent
  - Long shot (but difficult)
  - Good enough
  - Common core + Complementarity/team
- How to attract? Employer branding
- Use assessment tools
- Selection AND development
  - People develop during their careers
  - Environmental/societal changes
- Ask for independent advice/support
- Do it together:
  - Anxiety is everywhere: work on that
  - Change and development is not an option – it is a necessity
  - All on board: policy makers, unions, …
  - Transparency in process/communication
  - No employee left behind

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