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Developing Self-Report Measures of Creative Process Behaviors

Avery Smith

Western Oregon University, asmith14@mail.wou.edu

Caitlin Hochderffer

Western Oregon University, chochderffer16@mail.wou.edu

David Foster

Western Oregon University, fosterd@mail.wou.edu

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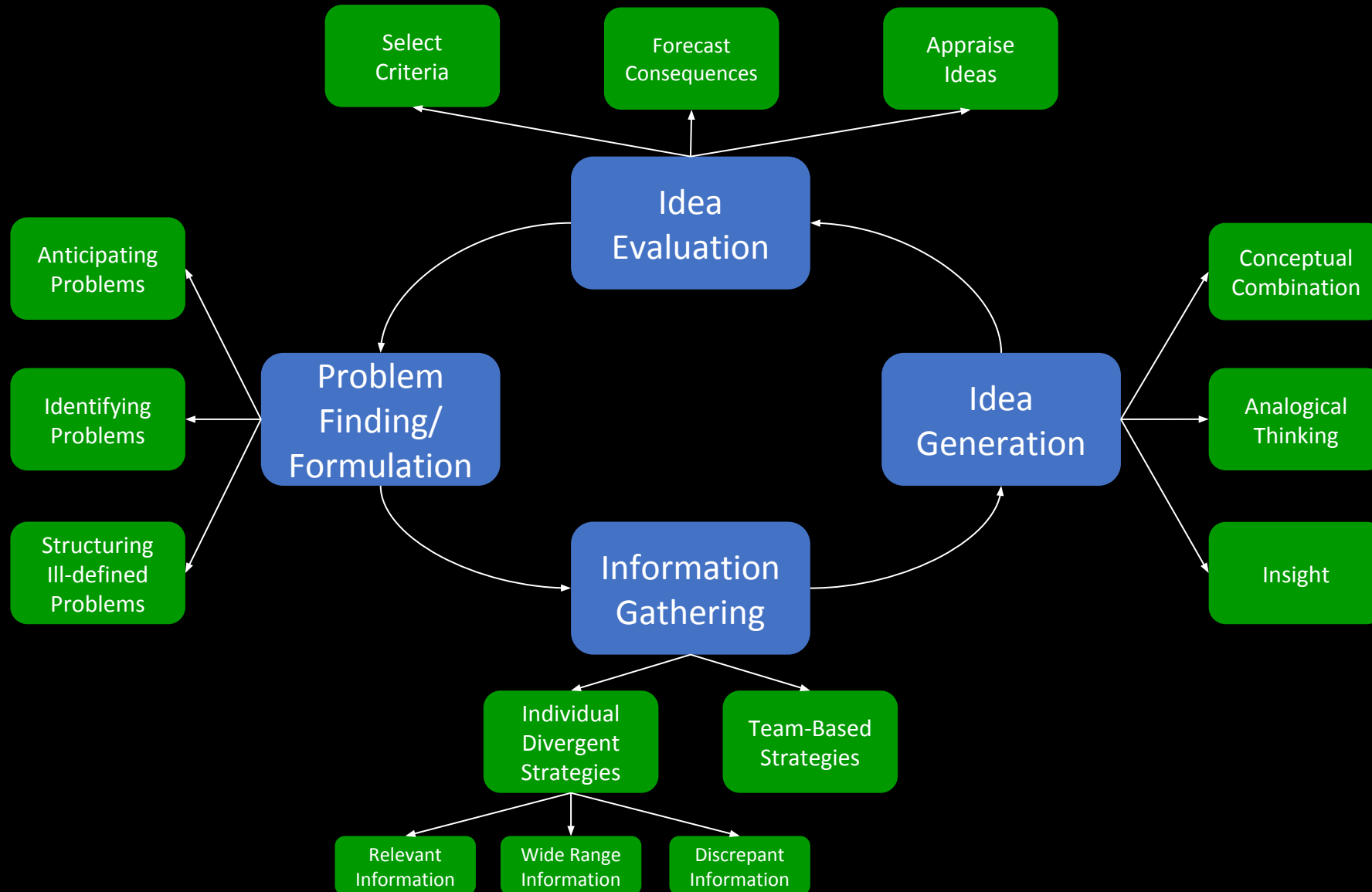
DEVELOPING SELF-REPORT MEASURES OF CREATIVE PROCESS BEHAVIORS

Caitlin Hochderffer, David Kampff, Avery Smith, and David Foster
Western Oregon University

The Problem

- Psychometric measures of the creative process or “creativity tests” have been used extensively to quantify creative behavior (Plucker & Makel, 2010).
 - Over reliance on divergent thinking tests.
- 2 major problems with this approach.
 - Theoretical models of the creative process proposed by various researchers posit that creative behavior is more than just the ability to engage in divergent thinking.
 - Relying solely on measures of divergent thinking does not provide researchers with the ability to examine the full spectrum of behaviors comprising the creative process.
- Our study attempts to develop and validate measures of key creative behaviors.

Proposed Model



Method: Participants

- Data were collected from a total of 257 undergraduate students at a mid-sized regional university.
- There were 230 usable cases
 - Eighty-one percent of the participants were female
 - Seventy-one percent were white.
 - Mean age was 22.6 years.
 - Participants received course credit for their participation.

Method: Measures

- Participants completed the 77-item Creative Behaviors Scale with items distributed across the four behaviors
 - Problem Formulation - 23 items
 - Information Gathering - 17 items
 - Ideation - 20 items
 - Evaluation - 17 items.
- Participants rated how often they engaged in each behavior on a Likert-type scale ranging from 1 = “Never”, 2 = “Rarely”, 3 = “Sometimes”, 4 = “Often”, and 5 = “Always”.

Method: Procedure

- Participants accessed the study through SONA, a cloud-based software used to manage subject pools.
- After providing informed consent, subjects completed an online survey assessing the extent to which they engaged in each creative behavior.

Results

- Analyzed each creative process independently.
- Used a 2-step process
 - Step 1: Examined item factorability
 - Inter-item correlation ($> .30$)
 - Kaiser-Meyer-Olkin measure of sampling adequacy ($>.60$)
 - Bartlett's test of sphericity ($p < .05$)
 - Diagonals of the anti-image correlation matrix ($> .50$)
 - Communalities ($> .30$)
 - Step 2: Factor Analysis
 - Maximum likelihood factor analysis with an oblimin rotation (Factor loadings greater than $.40$).

Table 1: Factor loadings and communalities for the items from the Problem Formulation Scale (N= 230)

	Finding	Searching	Considering	Structuring	Communalities
Item 1	0.62				0.41
Item 2	1.07				1.00
Item 3		0.55			0.38
Item 4		0.76			0.57
Item 5		0.64			0.43
Item 6			0.55		0.45
Item 7			0.50		0.32
Item 8			0.60		0.35
Item 9			0.46		0.22
Item 10				-0.59	0.54
Item 11				-0.50	0.46
Item 12		0.32		-0.43	0.48

Table 2: Factor loadings and communalities for the items from the Information Gathering Scale (N= 230)

	Breadth	Depth	Discrepant	Communalities
Item 1	0.74			0.49
Item 2	0.61			0.41
Item 3	0.59			0.38
Item 4		-0.53		0.47
Item 5		-0.91		0.77
Item 6			0.56	0.29
Item 7			-0.58	0.38
Item 8			-0.66	0.44

Table 3: Factor loadings and communalities for the items from the Ideation Scale (N= 230)

	Combining	Insight	Analogy	Connecting	Communalities
Item 1	0.48				0.30
Item 2	0.82				0.59
Item 3	0.51				0.44
Item 4	0.67				0.54
Item 5		0.57			0.36
Item 6		0.73			0.52
Item 7		0.76			0.53
Item 8			0.66		0.49
Item 9			0.68		0.50
Item 10			0.58		0.43
Item 11				0.41	0.26
Item 12				0.58	0.43

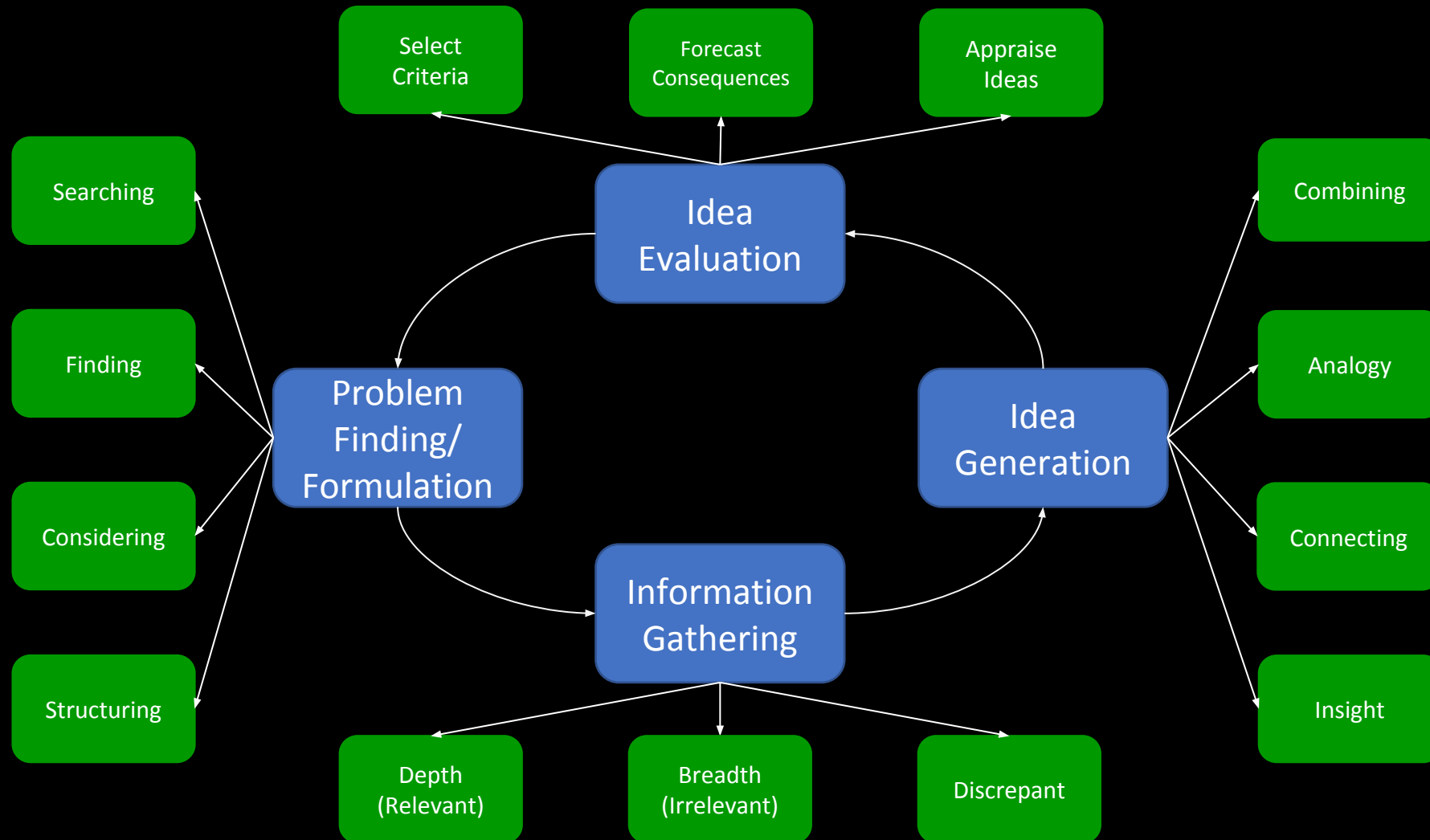
Table 4: Factor loadings and communalities for the items from the Evaluation Scale (N= 230)

	Appraising	Forecasting	Selecting Criteria	Communalities
Item 1	0.94			0.81
Item 2	0.52			0.42
Item 3	0.47			0.30
Item 4		0.54		0.46
Item 5		0.59		0.47
Item 6		0.81		0.58
Item 7		0.43		0.21
Item 8			0.40	0.31
Item 9			0.71	0.47
Item 10			0.46	0.35

Table 5: Descriptive statistics for all of the factors (N = 230)

	No. of Items	M(SD)	Skewness	Kurtosis	Cronbach's α
Finding	2	3.46(.75)	.10	-.40	.77
Searching	3	4.18(.56)	-.37	-.34	.69
Considering	4	3.26(.56)	-.35	.00	.55
Structuring	3	3.82(.63)	-.26	.00	.73
Breadth	3	3.76(.60)	-.11	-.40	.57
Depth	2	3.53(.72)	-.23	.08	.71
Discrepant	3	3.62(.67)	-.37	-.07	.63
Combining	4	3.41(.57)	-.06	.97	.74
Insight	3	3.36(.65)	-.16	-.10	.70
Analogy	3	3.65(.55)	.00	.14	.54
Connecting	2	3.36(.73)	-.15	-.25	.50
Appraising	3	3.03(.85)	-.14	-.34	.70
Forecasting	4	3.76(.58)	-.33	.32	.72
Criteria	3	3.34(.61)	-.44	.55	.62

Discussion: Revised Model



Next Steps

- Revise questions
- Re-administer the survey through Amazon Mechanical Turk to a sample of working professionals.