

# Validation of Processing Speed within the School Neuropsychological Conceptual Model and Neuropsychological Processing Concerns Checklist using Exploratory Factor Analysis and Pearson Product-Moment Correlation

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These data were drawn from an archival sample of 956 mixed clinical case studies with imputed data conducted by students in the School Neuropsychology Post-Graduate Certification Program (2001 - 2010).

School Neuropsychology Conceptual Model of Speed and Efficiency of Cognitive Processing (Miller, 2007, 2010)

PROCESSING SPEED\*

➤ WISC-IV: Cancellation

➤ WISC-IV: Coding

➤ WISC-IV: Symbol Search

➤ WJIII COG: Decision Speed

➤ WJIII COG: Visual Matching

\* Reflects most recent version (i.e., Miller, 2010) of the SNP model

	Cancellation	Coding	Symbol Search	Decision Speed	Visual Matching	NPPC Factor 1 Parent (Teacher)	NPPC Factor 2 Parent (Teacher)
Cancellation	1.00	.329***	.307***	.058	.054	-.143*** (-.091**)	-.057 (-.073*)
Coding		1.00	.503***	.165***	.178***	-.144*** (-.098**)	-.078* (-.095**)
Symbol Search			1.00	.215***	.179***	-.067* (-.021)	-.004 (-.055)
Decision Speed				1.00	.590***	-.136*** (-.038)	-.163*** (-.078*)
Visual Matching					1.00	-.141*** (-.091**)	-.049 (-.045)
NPPC Factor 1 Parent (Teacher)						1.00	.432** (.436**)
NPPC Factor 2 Parent (Teacher)							1.00

\*\*\* p < .001; \*\* p < .01; \* p < .05

Processing Speed Subtest	Factors and Related Loadings	
	1	2
Factor 1: WISC Speed of Processing		
WISC-IV: Cancellation	.711	-.077
WISC-IV: Coding	.798	.144
WISC-IV: Symbol Search	.774	.193
Factor 2: CHC Speed of Processing		
WJIII COG: Decision Speed	.092	.882
WJIII COG: Visual Matching	.076	.883
Percentage of the variance explained by factor	35.10%	32.45%
Cumulative percentage of variance explained by factor	35.10%	67.55%

Neuropsychological Processing Concerns Checklist	Factors and Related Loadings	
	Parent (Teacher) 1 / 1	Parent (Teacher) 2 / 2
Factor 1: Speed Concerns		
Takes longer to complete tasks than others the same age.	.783 (.829)	.143 (.187)
Slow reading that makes comprehension difficult.	.750 (.736)	.070 (.054)
Homework takes too long to complete.	.804 (.688)	.210 (.195)
Requires extra time to complete tests.	.773 (.838)	.278 (.211)
Responds slowly when asked questions.	.710 (.715)	.212 (.263)
Factor 2: Speed with Accuracy Concerns		
Does well on timed tasks.	.181 (.210)	.866 (.823)
Recalls information accurately and quickly.	.196 (.161)	.846 (.853)
Percentage of the variance explained by factor	42.77% (42.67%)	23.68% (22.79%)
Cumulative percentage of variance explained by factor	42.77% (42.67%)	66.46% (65.46%)

- Implications:
- WISC-IV and WJIII COG Processing Speed subtests do not measure the same aspects of processing speed.

• Subtests appear to factor by the test to which they belong rather than type of task.

• Checklist items appear to factor based on presence of expectations of accuracy when performing timed tasks versus expectations of task completion in a timely manner.

• Ratings on checklist items by parents and teachers appear to be associated with performance on measures of processing speed such that ratings indicating greater deficits in processing speed are associated with poorer performance on tasks of processing speed.