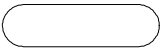


:

(申宗昊)\* (曹成元)\*\*



가

가

4 6 93

가

가

가 가

■ : , , , ,

\*

\*\*

I.

가

가

가

(under-achievement)

가 ,

(learning disabilities)

가

(Meltzer, 1994).

(Hoff, 2001; Kagan,

1966; Klausmeier, 1977).

가

가

(Bowe, 2000),

가 , 가

4

가

(Bruer, 1999).

가

(visual perception)

가

(Hallahan, Kauffman, &amp; Lloyd, 1999),

( , 1999).

가

가

(semantic inferences of similarities and differences)

(knowledge representation)

(Anderson, 1995).

(Roland &amp;

Frieberg, 1985; Tamminga, 1999; Tulving &amp; Schacter, 1990).

(Mandler, 1992). , 4

, 가

(Melkman, Tversky, &amp; Baratz, 1981; Needham, 2001).

가

가?

가?

가?

## II.

1.

1) :

(concept)

(Merrill & Tennyson, 1977; Prater, 1993).

가

(categorization system)

(defining attributes) 가 (variable attributes)

가

(examples) (non-examples)

가

(recognition)

(cognitive tools)

(context)

( : ' ' )

( : ' )

(context independent)

(context dependent)

(Barsalou, 1982).

가

가

가  
가  
(Tessmer, Wilson, & Driscoll, 1989).

가 , , ,

가  
1) ( :  
) 가

2)  
가  
가  
(Kagan, 1966).

(perceptual features), (physical attributes), (experiential information)  
(Needham, 2001). 가

(visually based representation) (linguistically based representation)

가 , ,

4  
(Melkman & Deutsch, 1977; Melkman, Tversky, & Baratz, 1981).

가 가

( : 4 6 )

Klausmeier(1977)

level), (classificatory level), (concrete level), (formal level), (identity

Klausmeier(1977) operation) (mental

. Klausmeier(1977)

4

3 4

4 (Seefeldt & Barbour, 1998). 4

가 가

2.

1)

(dual-coding theory) ,  
가 (representation) (Paivio, 1986).  
Santa(1977)

(linear)

가

(implicit memory)

(Parker, Gellatly, &

Waterman, 1999; Tulving & Schacter, 1990).

가

가

( )

가 ' '

가

가

가

. Tulving

Schacter(1990)

(perceptual representation system)

(semantic representation

system)

가

(alexia)

'blood'

가

가

가

(agnosia)

가

2)

가

가

Roland Frieberg(1985)

가

가 가

가 가

가

가

Tamminga(1999)

(superior temporal gyrus)가

(inferior frontal gyrus),

(middle temporal

gyrus),

(inferior temporal gyrus)가

가

가

3.

가

(context independent)

(focal target)



, (context interactive)

(Ackerman, 1990). ,

가

가 ,

(Ackerman, 1990).

(odddity task)

(Ackerman, 1986, 1987, 1990).

가

( : - - )

( : - -

)

가

가

가

가

(Anderson, 1995).

(Parker, Gellatly,

Waterman, 1999).

(Ackerman, 1987).

가

가

( : )

( : )

가

(Crocker & Algina, 1986)

가

가 , 4, 5, 6

가

가

Klausmeier(1977)

### III.

1.

2

4

6

93

가

, 4

22 (23.7%), 5

37 (39.8%), 6

34 (36.6%)

가 50 (53.8%),

가 43 (46.2%)

2.

가

1)

[ 1 ]



[ 1 ]

3

20

20

가 .63,

.75

2)

20

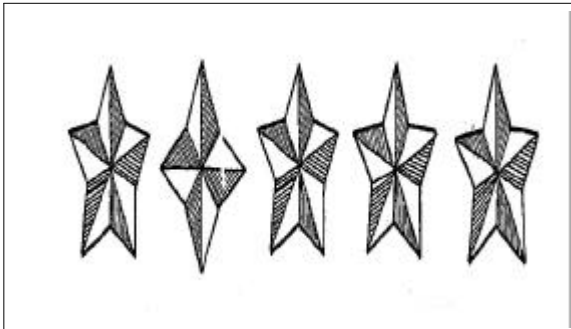
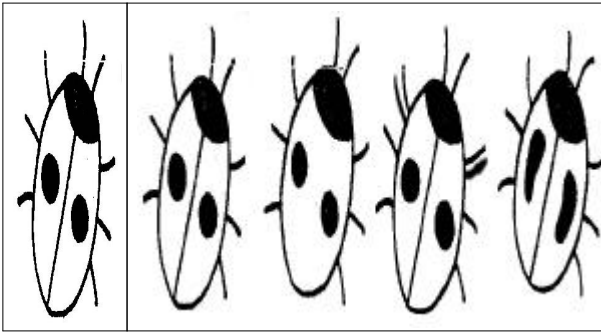
가 [ 2]

가

3 가

가 .63,

가 .78



[ 2]

3)

(events) (indirect outcome) (objects)  
 가 , (indicator)  
 (Hoff, 2001).  
 (Early Childhood Research  
 Institute) 가 .  
 7 200 .  
 , 20 , 30 , 40  
 , 30 , 30 , / 30  
 가 . 200  
 .  
 ( : Peabody Picture Vocabulary Test) .72  
 .81  
 =.94 (Shin, Good, Greenwood, & Luze, 2001).

3.

, ,  
 . ,  
 가 Pearson  
 가  
 ,  
 가 Tukey HSD(Honestly Significant  
 Difference) ,  
 (Repeated Measures  
 ANOVA)  
 가 (within-group) , (between-group)

가

가

< 1>

< 1>

	.56**	.53**	.58**	.26	.49**	.43**

\*\*  $p < .01$

가 (moderate)

가

.53 .58

가

( $t = 2.02, df = 94$ ).

Williams(1959)가

(Howell, 1992, pp. 253-254).

가

가

(< 2>).

가

4 6 (p<.01),  
 4 5 6 (p<.01),  
 4 5 6 (p<.01),  
 4 6 (p<.01),  
 4 5 6 (p<.01),  
 4 5 6 (p<.01).

< 2>

						F	p
	4	21	5.81	3.10	5.27	.00	
	5	37	7.50	3.03			
	6	34	8.71	3.37			
	4	21	7.44	3.35	11.60	.00	
	5	37	10.23	2.83			
	6	34	11.47	3.00			
	4	21	13.24	5.89	11.17	.00	
	5	37	17.73	4.76			
	6	34	20.36	5.73			
	4	14	10.57	3.41	7.71	.00	
	5	23	12.87	3.03			
	6	13	15.15	2.54			
	4	14	11.47	3.00	5.52	.00	
	5	23	14.78	3.18			
	6	13	15.15	4.14			
	4	14	22.07	4.86	8.53	.00	
	5	23	27.65	5.47			
	6	13	30.31	5.65			

가

(Klausmeier, 1977).

가

가 < 3>

. < 3>

가

가

가

가 < 4>

&lt; 3&gt;

4	21	5.81	3.10	7.44	3.35
5	37	7.50	3.03	10.23	2.83
6	34	8.89	3.40	11.47	3.00

&lt; 4&gt;

				F	p
	229.90	1	229.90	49.16	.00
*	8.81	2	4.40	.94	.39
	411.50	88	4.68		

&lt; 4&gt;

가

가

가 &lt; 5&gt;

. &lt; 5&gt;

가 ,

가

. , 6

4 5

가

가

가 &lt; 6&gt;

&lt; 5&gt;

4	14	10.57	3.41	11.50	3.11
5	23	12.87	3.03	14.78	3.18
6	13	15.15	2.54	15.15	4.14



&lt; 6 &gt;

				F	p
	21.05	1	21.05	3.19	.08
*	15.63	2	7.82	1.18	.32
	310.38	47	6.60		

&lt; 6 &gt;

가

가

가

V.

가

(mental construct)

(cognitive tools)

(Tessmer et al., 1989).

(Merrill &amp;

Tennyson, 1977),

가

4 6 가

( , 1990; Melkman

& Deutsch, 1977; Melkman, Tversky, & Baratz, 1981; Needham, 2001).

가

(Parker, Gellatly, & Waterman, 1999; Paivio, 1986; Roland & Frieberg, 1985; Tamminga, 1999; Tulving & Schacter, 1990).

가

가

가

(Attention Deficit Hyperactivity Disorders)

가

Familiar Figures Tests)

( : Stop Task)

( : Matching

가

(Tannock,

1998).

가

가

가

가

(conceptual network)

(Bankroft, 1995).

가

가

(Bowe, 2000).

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가

(Prater, 1993).

가

가

(Tessmer, Wilson, & Driscoll, 1989).



(1999). . (1999). (pp. 130-159). : .  
 (1990). - - . , 41, 193-207.

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 , 『

『Technical adequacy of maze probes for curriculum-based  
 measurement of reading growth』, 『Using Curriculum-Based Measurement to  
 Establish Growth Standards for Students with Learning Disabilities』

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## Abstract

## **Psychometric Comparisons of Testing Methods on Cognitive Abilities Related to Preschoolers' Conceptual Development: Semantic-versus Perceptual-Based Approaches**

Shin, Jong-Ho\* ·Cho, Sung-Won\*\*

Conceptual development is critical for cognitive development in early childhood and for school learning in later years. Concepts are more than cognitive classification systems of examples and non-examples. Rather, they are cognitive tools used to identify relationships among given information. Difficulties in conceptual development are more likely to bring about difficulties with overall cognitive development and later school learning. Consequently, it is necessary to identify young children who experience difficulties with conceptual development and to provide timely educational helps for these children.

The purpose of the study is to compare two assessment approaches in measuring preschoolers' cognitive abilities of generalization and discrimination in relation to conceptual development: Semantic-based and perceptual-based approaches. Traditionally, a perceptual-based test has been used to measure children's abilities of concept learning, which commonly uses geometrical figures. The test, however, has been criticized for improper psychometric features; therefore, the necessity of developing alternative testing methods is being emerged.

In this study, we developed a semantic-based test as an alternative to the traditional test. The semantic-based test was composed of pictures describing common real situations children encounter in their everyday life. The development of the test was theoretically based on research findings in the fields of cognitive psychology, bio-psychology, and child psychology. According to the findings of cognitive- and bio-psychology, knowledge

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representations are processed separately for perceptual and semantic information. The findings of child psychology also suggest that conceptual development in early childhood transits from perceptual-based to semantic-based development.

In the study, three specific research questions were investigated in relation to validity comparisons between perceptual- and semantic-based tests. Ninety-three young children aged 4 to 6 participated in the study. Results of the study showed that the semantic-based test correlated with the expressive language measure more highly than the perceptual-based test, and that the one reflected developmental differences between abilities of discrimination and generalization more sensitively than the other. Group differences between different age groups, however, were detected by the two tests. In sum, the semantic-based approach would be more valid than the perceptual-based approach in measuring preschoolers' cognitive abilities of discrimination and generalization.

■ **Key Words** : semantic-Based Test, perceptual-Based Test, conceptual Development, generalization, discrimination