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(Craig and Yore, 1996)

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(Murray, 1989)

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.(Yore and Shymansky, 1991)

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.(Vacca and Vacca, 1996)"

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(Yore, Shymansky, Henriques, Chidsey and Lewis, 1997)

(Anderson, 2002)

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(Hall

and Bowman, 1999)

(Young, Righeimer and Montbriand, 2002)

(Harrison, 1991; Craig

and Yore, 1992)

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(Vlachou and Buchel, 2002)

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(Vacca and Vacca, 1996)

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(Roeschl-Heils,

Schneider and van Kraayenoord, 2003; Yore, Hand and

Florence, 2002)

(Jacobson, 1998)

(Yore, Holliday and Alvermann, 1994)

(Borokowski, Carr and Pressley,

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and Evans, 1989)

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334	10	172	162	
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3.47	19.96	3.56	20.51	3.43	22.02	
3.56	20.33	3.57	20.60	3.55	21.91	
3.20	20.19	3.63	20.01	3.51	21.55	
3.01	20.81	2.96	20.40	2.70	23.04	
3.02	20.33	3.82	20.72	4.13	22.29	

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*0.002	2325.91	12	2.64	0.97	
*0.000	2643	15	89.55	0.01	

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*0.002	4.32	48.62	4	194.49	
0.202	1.49	19.44	4	73.76	
0.080	2.09	2.09	4	92.96	
		11.25	881	9909.34	
		12.36	881	10883.20	
		11.11	881	9790.44	

: (0.81) (0.72) (0.77)
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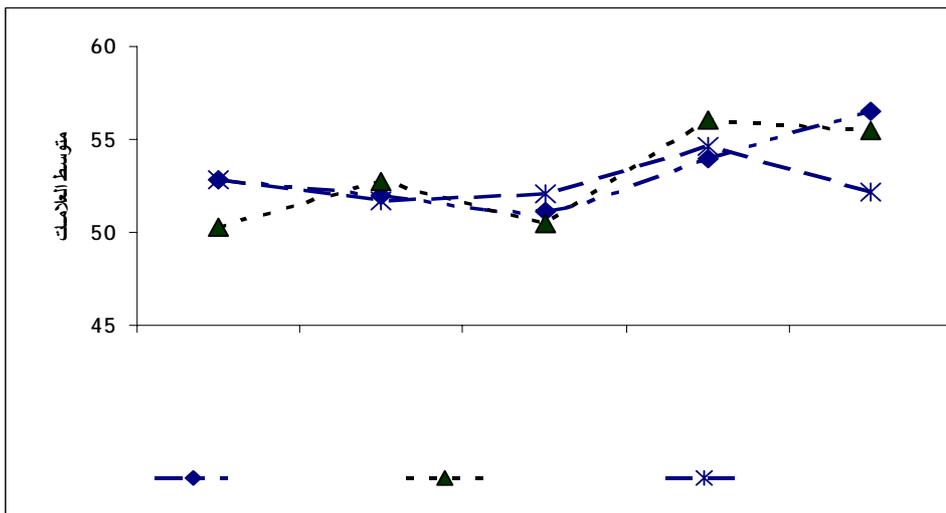
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σ	\bar{X}	σ	\bar{X}	σ	\bar{X}
2.38	(52.82) 11.62	1.52	(50.25) 4.02	1.51	*(52.83) 6.34
2.69	(51.68) 11.37	1.44	(52.75) 4.22	1.47	(52.00) 6.24
2.59	(52.05) 11.45	1.59	(50.50) 4.04	1.32	(51.17) 6.14
2.23	(54.59) 12.01	1.31	(56.00) 4.48	1.17	(53.92) 6.47
2.81	(52.18) 11.48	1.60	(55.50) 4.44	1.87	(56.50) 6.78

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0.058	2.29	4.95	4	19.81		
*0.012	3.22	7.12	4	28.48		
*0.031	2.66	18.19	4	72.77		
		2.16	1172	2532.62		
		2.21	1172	2591.14		
		6.83	1172	8005.38		

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Univariate F-tests

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1.000	0.12	0.16-	-	
1.000	0.13	0.02	-	
*0.039	0.14	0.41-	-	
0.373	0.16	0.33-	-	
1.00	0.13	0.18	-	
0.656	0.14	0.25-	-	
1.000	0.16	0.17-	-	
*0.049	0.15	0.43-	-	
0.381	0.17	0.35-	-	
1.000	0.18	0.08	-	
1.000	0.20	0.20	-	
1.000	0.23	0.21	-	
0.439	0.25	0.51-	-	
1.000	0.28	0.26	-	
1.000	0.22	0.03	-	
*0.034	0.24	0.71-	-	
1.000	0.27	0.06	-	
0.079	0.29	0.71-	-	
1.000	0.30	0.06	-	
0.131	0.31	0.77	-	

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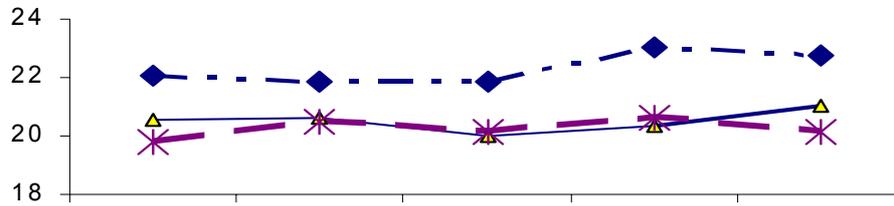
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*0.004	0.30	0.86		
0.314	0.29	0.29		
*0.038	0.27	0.53-		
0.104	0.26	0.43-		
0.436	0.31	0.24		
0.307	0.30	0.36		
0.221	0.27	0.33		
0.335	0.28	0.27-		
0.318	0.29	0.29		
0.156	0.29	0.41-		
0.868	0.26	0.04		
0.096	0.26	0.44-		



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(Thomas and Barksdale-Ladd, 2000)
(Berkowitz, 1986)

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The Development of Sixth to Tenth Graders' Metacognitive Knowledge Related to Science Reading

*Hind Alhammouri and Mahmoud Alweher**

ABSTRACT

This study aimed at investigating the trend of development relationship between metacognitive knowledge of science reading and class level, and exploring the components of the relationship. An adapted Yore and Craig's instrument was applied to a sample of 1423 sixth to tenth graders. Multivariate Analysis of Variance was used. The results revealed that there were no development in procedural or conditional metacognitive knowledge of science reading, or in declarative metacognitive knowledge of reading science text. However, there was development in declarative knowledge of science text among grades: six and nine, and eight and nine, and in the same knowledge related to reading strategies among grades seven and nine, only. The results showed that the relationship between metacognitive declarative knowledge of science reading and class level consisted of two components: linear and cubic.

Keywords: Metacognitive knowledge, declarative knowledge, procedural knowledge, conditional knowledge, development, science reading.

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