

Klopper

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Klopper

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2002 8

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Abstract

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- 1.	-----	(1)
- 2.	-----	(3)
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- 1.	-----	(4)
- 2.	-----	(9)
- 3. 10	-----	(15)
- 4. 가	-----	(23)
.	-----	(34)
- 1.	-----	(34)
- 2.	-----	(35)
- 3. 「 」	-----	(39)
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[1]		-----	(8)
[2]	7	-----	(9)
[3]		-----	(13)
[4]	7	10 「 」 -----	(19)
[5]		• -----	(22)
[6]	Bloom	가 -----	(25)
[7]	Klopfer가	-----	(27)
[8]		Klopfer -----	(36)
[9]	[]	-----	(40)
[10]	[]	-----	(41)
[11]	7	-----	(44)
[1]		• -----	(11)
[2]		-----	(44)

Abstract

Analysis on the 10th-Grade Textbooks of Science in 7th Curriculum by
Klopfer 's Taxonomy of Education
Objectives

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Major in science education

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This study was to analyze on the 10th-Grade(1st Grade of high school) Textbooks, 「science」, of The National Common Basic Curriculum on 7th curriculum, and thereby to give teachers insights into rearranging and using the textbooks for their educational conditions. By means of Klopfer's Taxonomy of Education Objectives , well-known as a framework appropriate for classification of science education objectives focusing on exploring processes, the science book 'Science' were analyzed as to how much their learning objectives accord with the education objectives of curriculum.

In this study, it was found out that the education objectives of the

7th science curriculum properly included all the areas of Klopfer's objectives categorization. and especially they emphasize Application of Scientific Knowledge Methods(category F0), Attitudes and Interests(category H0), Orientation(category I0). But the science textbook based on the 7th curriculum was assigned 51%, 24% of their objectives to some areas such as Knowledge and Comprehension, Scientific Exploring Processes (category A0~E0).

Compared to NSTA, those percentage are 4% higher in the part of Knowledge and Comprehension and 6% lower in the part of Scientific Exploring Processes. All the rest of its learning objectives were assigned 7%, 3%, 6% to each area such as Application of Scientific Knowledge Methods(category F0), Attitudes and Interests(category H0), Orientation(category I0).

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 1960 ,
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 가
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 가
 가 [9] Klopfer
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가

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(1) Klopfer

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(2)

가

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- 1.

[8]

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1 (1955),

2 (1963), 3 (1973), 4

(1981), 5 (1987), 6

(1992), 7 (1997)

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(2) 1 (1945~1963)

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(3) 2 (1963~1973)

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(4) 3 (1973~1981)

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(5) 4 (1981~1987)

1973
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가
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(6) 5 (1987~1992)

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(7) 6 (1992~1997)

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[1]

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[8]

가

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[2] 7

(2) 「 」

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8	- 가 -	- -	- -	- -			
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[8]

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가 ’ ,

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(3)

가 7 「 」

.[13]

가.		가 , ,
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	2.	가 , . .
	3.	, 가 . 가 ,
	4.	가 . .
		가
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	2.	. . .
	3.	. , 가 .
		가

.	1.	가 . ,
	2.	가 . , .
.	3.	가 , .
		가
.		가 , , , , .

[4] 7 10 「 」

(4) 6 7

1 6 []

7 「 」 [5] .

[5] 7 6

10- (2) ‘ ’ ,

. 6 (3) (4)

7 10- (3) .

6 (4) , , ,

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, 7 ‘ ’가 .

가 . 6 (6)

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8 6

6 7 .

	6	7
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	• 1 : (8)	• 1 : (6)
	• 2~3 , , , (4) , . , (8)	• 2~3 (4) , . , (4) , . , (6)
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	(1) (2) (3) : , , (4) : , , , , (5) : , , , (6) (7) : , , , , , , (8)	10- (1) 10- (2) 10- (3) : , , , 10- (4) : , , 10- (5) : , , 10- (6) : , , , ,
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[5] .

- 4. 가

(1) 가
4가 (, , -
, 가)
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, 가
[23]
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가
[17]
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가
, 가
가
[25] 가
가
가
, 가 가
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가 . Tyler
(interests) (needs) , ,
[23]
가

(2) Bloom

- 24 -

가 (recall) .
 , , , , 가
 (mode of operation)
 (techniques) .[20]
 가 가 [6]
 Bloom

					...		
	A						
		B				E	
			D				F

[6]. Bloom 가
 [6] 가
 가 A,B,C (cell)
 .
 Bloom
 가 .
 가
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 가
 , Klopfer 가
 .[19]

(3) Klopfer

가. Klopfer

Klopfer

Bloom

.[9] Klopfer

Bloom

. Bloom

가

.[18][20][21]

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, , , , 가

. , (product)

(process)

가

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가

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가

.[23]

가

Bloom

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Klopfer(1971)

'Handbook on

Formative and Summative Evalution of Learning'

가

. Klopfer가

[7] .

	A.0	B.0	C.0	D.0	E.0	F.0	G.0	H.0	I.0
		(I)	(II)	(III)	(IV)				
	A1 ~A11	B1 ~B3	C1 ~C4	D1 ~D6	E1 ~E6	F1 ~F3	G1 ~G2	H1 ~H6	I1~I5
2.2									
2.21									
2.22									
2.23									

[7] Klopfer가

Klopfers

Bloom

가

Bloom

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Bloom

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orientation()

1970

1950

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Klopfers

Bloom

3가

3가

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. [20]

. Klopfers

Klopfers

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1.0

1.1. ()

1.11 , 1.12 , 1.13

1.14 , 1.15 , 1.16

1.2 ()

1.21 , 1.22

1.23 , 1.24 , 1.25

1.26

1.3

1.31 , 1.32 , 1.33

1.34 , 1.35

2.0

2.1

2.11 , 2.12 , 2.13 ,

2.14 , 2.15 , 2.16 ,

2.17 , 2.18 , 2.19

2.110

2.2

2.21 , 2.22 , 2.23 , 2.24

2.25 , 2.26 , 2.27

2.28 , 2.29 , 2.210

2.211 , 2.212 , 2.214

2.3

2.31 , 2.32 , 2.33 ,

2.34 (Physical Geology), 2.35 (Historical Geology)

2.36 , 2.37

3.0

3.1 , 3.2 ,

3.3 , 3.4 , 3.5

Klopfer ,

I(), II(
, III(), IV(
,), , ,
, , .

A0

A1

A2

A3

A4

A5

A6 , ,

A7

A8

A9

A 10

A 11

B0 I :

B1

B2

B3

B4

B5

C0 II :

C1

C2 가

C3 가

C4

D0 III:

D1

D2

D3

D4

D5 가

D6

E0 IV : ,

E1

E2

E3

E4 가

가

가

가

. Klopfer
Klopfer , 가
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가
.[9]
Klopfer 가
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(topic)
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가 . 가
가 ,
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7

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(1)

가

가

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1997-20)

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[8]

Klopper ,
가 ,
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7 4
[8] .
,
가 ,
Klopper
(A0) (B0~E0) (H0)
(I0) .
1 ‘
,
(A0)
(F3)
.
2
, 가 ,

		Klopfer
	가 , 가	(H0) (A0) (B0~E0) (I0)
	1. 2. .() 3. .() 가 , 4. .() · (· ·)	(B0~E0) (A0) (F3) (B0~E0) (F3) (H5) (F3) (I5)

[8]

Klopfer

, , 가
 Klopfer
 (B0~E0) ,
 Klopfer (F3)
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 가
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 . Klopfer (H5),
 (F3) .
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 Klopfer (15) .
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 7 - -
 가 . ,
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7 Klopfer
 (G0)
 , (G0)
 (B0~E0)
 , Klopfer
 , (A0)
 (E0)
 (H0), (I0) (F0),
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(1) [1~7]

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가 29% 가 , 가
24% . A,
B, C .

		()	(%)		:		
1		180	29	11	:1 :1 :1 :2 :7	:3 :3 :2 :3 :1	A
2		150	24	13	:3 :1 : 1 : 1 :1 : 7	:2 :4 :2 :2 :2	B

3		120	9	9	:1 :6 :3	:2 :2 :3 :3	C
4		56	9	9	:1 :1 :2 :2 :3 :1	:3 :2 :3 :2	D
5		56	9	7	:2 :1 : 5	:2 :3 :1 :2	E
6		40	7	10	:2 :1 :3 :4 :1	:2 :4 :3 :2	F
7		12	2	7	:1 :7	:2 :2 :2 :2	G

[9] []

(2) 「 」

7 1 []

Klopfer

가 [10] .

(%)	A.0	B.0~E.0	F.0	G.0	H.0	I.0	
A	96	37	13	-	6	1	153
	63%	24%	9%	-	4%	1%	
B	25	9	7	0	1	7	50
	52%	18%	14%	0	2%	14%	
C	15	33	-	-	2	2	52
	29%	63%	-	-	4%	4%	
D	45	40	6	3	2	10	106
	42%	38%	6%	3	2%	9%	
E	56	24	5	5	2	5	97
	58%	25%	5%	5	2%	5%	
F	61	26	6	-	5	4	102
	60%	25%	6%	-	5%	4%	
	51%	32%	7%	1	3%	6%	

[10] []

A 3~4 .

가 2~3

. A

(A0)가 63%

. (B0~E0) 24% .

(F0) 9%

, (H0) 4%,

(I0) 1% .

(G0) .

B 가

가 .

(F0) ,

가 , 가,

(I0)가 14% 6

가 . (A0) 52%

, (B0~E0) 18%, (H0)

2% .

C 가

(A0)가 29% 6

(A0) 51%

. (B0~E)) 63% .

(H0) (I0) 4%

. (F0)

. .

D (B0~E0) 38% C

(G0) 가

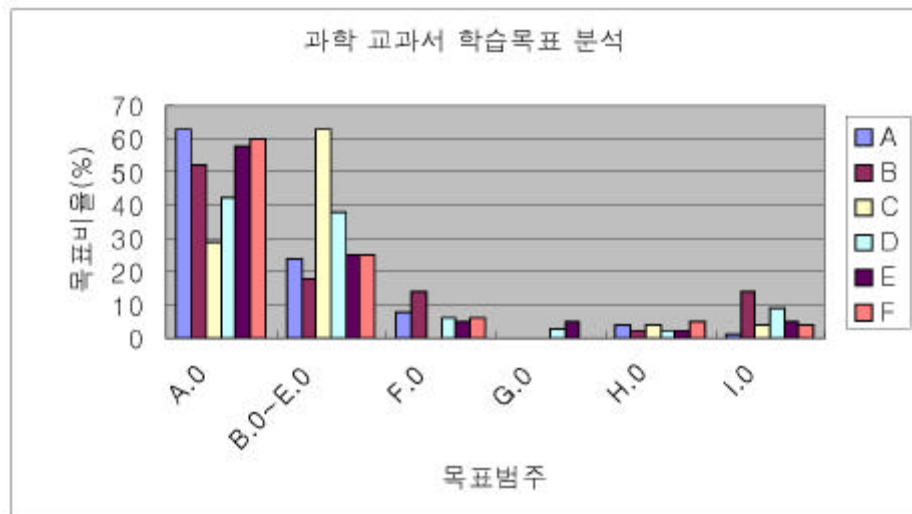
3% . (A0) 42%

(F0), (H0), (I0)

6%, 2%, 9% .

E (G0) 5% 가

(A0)가 58%,
 (B0~E0) 25%, (F0) 5% ,
 (H0)가 2%, (I0) 5%
 F (A0)가 60%, (B0~E0) 25%,
 (F0) 6%, (H0)가 5%, (I0)
 4% (G0)
 E
 E 6 가 (A0)
 가 51%
 47%가 NSTA(National
 Science Teacher Association)[16] 4% ,
 (B0~E0) 24% NSTA
 30% 6%
 [2]



[2]

[2] 가 (A0)
 . (G0)
 가 (B0~E0)
 (H0), (I0)
 .

(3)

7 [10]
 [11] .

	A0	B0~E0	F0	G0	H0	I0
			F1,F2,F3	-	H2,H5	I5
(%)	51%	32%	7%	1%	3%	6%

[11] 7

[11] B0~E0

. [10] 7
 (A0), (B0~E0), (F0),
 (H0), (I0) (B0~E0)
 (F0) , 6

		80%	(A0)	(B0~E0)
,		(F0)	7%,	(H0) 3%,
(10)	6%	.		

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1997

2002

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[9] Klopfer

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Klopfer

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Klopfer

(A0) (~E0)

(F0), (H0), (I0) .

E 6 가 (A0)

가 51%

47%가 NSTA

4% , (B0~E0)

24% NSTA[16] 30% 6%

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가 (A0)

. (G0)

가 , (B0~E0)

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가 .

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가 .

1. 11 , , , 2002.2
2. 13 , , , 2002.2
3. 9 , , , 2002.2
4. 9 , , , 2002.2
5. 7 , , , 2002.2
6. 10 , , , 2002.2
7. 7 , , , 2002.2
8. , 가, , 2001
9. , Klopfer ,
 , 9 , 1984
10. , Klopfer 6
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 , 1999
11. , 6 ,
 , 1996
12. 6,7 1 ()
 , , 2001
13. . 7 , 1997
14. , , 2000
15. , 가, , 1988
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