

< 2001-6 >

**A study on the Practice Specification for Delivery  
and Development of the Electronic Textbook**

2001. 12

(ICT)

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9.	.....	39

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2.	.....	63
3.	.....	74

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1. ....	149
2. ....	161
3. 7 .....	168
4. ....	175

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Media) ROM (internet) '97 2000 ( ), ( )」, 「 (Multi CD- PC ROM (internet) '97 2000 「 ( ), ( )」, 「 가 가 가 ( ) , . .

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E-Book

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(e-mail)

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## 1.

가. (E-Book)

### 1)

(1997) (E-Book)

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DVD ( ) CD-ROM,

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2)

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(screen book)	- PC	- - -

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1.	
2. PC	
3.	

PC

E-Book

. H/W

E-Book

( , 2000).

3)

(2000)가

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E-Book H/W

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E-Book

가

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E-Book  
 (digital book)  
 (Palmtop), HPC(Hand Held PC : PC), PDA(Personal Digital Assistants : ),  
 E-Book PC E-Book . PC , PC ,  
 PC TV, PC (Fusion) PC (Post) PC  
 E-Book PC E-Book .  
 E-Book  
 E-Book ,  
 (e-mail)  
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 E-Book , 가  
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 E-Book . ,  
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 E-Book .  
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 가 , E-Book  
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 , PC ,  
 . (mobile phone) , E-Book  
 . E-Book  
 ( , 2000).

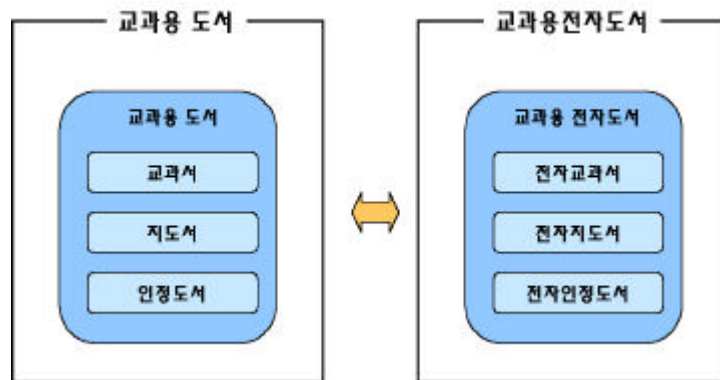
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(1997)

## 2.

ICT  
(CAI, Computer Assisted Instruction)  
(CMI, Computer Management Instruction)  
(WBI, Web Based Instruction)  
(contents)  
(CMS, Contents Management System)  
(LMS, Learning Management System)  
(LCMS, Learning Content Management System)

### 가. CAI

CAI  
가  
1961  
PLATO  
1981  
PLATO  
1988  
가  
가  
CAI  
CAI

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, 가 .

. CMI

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가  
가 CMI . CMI  
가

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. WBI

WBI

Web

. 가 WBI

(self-directed)

(self-paced)

, Web Browser

. WBI

가

3

가 (Harasim et al., 1995). ,

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 2001). CMS ,  
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## . LMS

LMS  
가  
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LMS  
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(platform)  
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( , 2001).

## . LCMS

CMS가 가 LSM 가

e-Learning

CMS

CMS e-Learning

LCMS가 (Jones, 2001). LCMS e-Learning (Learning Object) , , , (Brennan, Funke, & Anderson, 2001).

LCMS (LO, Learning Object)

. e-Learning (community) 가

가

(Daniel, 2001). LO

HTML , ,

(Wiley, 2001). LCMS가 AICC(Aviation Industry CBT Committee), IMS(IMS Global Learning Consortium), ADL(Advanced Distributed Learning) e-Learning  
 (Shepherd, 2001).  
 ADL SCORM(Sharable Content Object Reference Model) SCO(Sharable Content Object)  
 (ADL, 2001).

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가.

(1997) ‘ ,

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DB

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		<ul style="list-style-type: none"> <li>· (ftp, WWW, Archie, Gopher )</li> </ul>
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(CMI)	- , 가
S/W	- 가 - S/W ( , S/W )
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### 1) (Content Properties)

가 ( , 1995).

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### 2) (Functional Properties)

가 ( , 1995; Shneiderman, 1992).

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3) (Technical Properties)  
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-	가?	
-		가?

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-	가? 가?
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2001

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3. “ ” .	3. “ ” ) .
4. “ ” .	4. “ ” .
가	가
5. “ ” .	5. “ ” .
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6. “ ” .	6. “ ” .

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(  
S/W,  
)’

< - 19>		( )	
30 ( ) 1 6 , 2 4 . 1 20 .		1 6 , 2 4 , . 1 . 1	
33 ( ) , 가 . 32 2 . 1 30 36 6 .		33 ( ) [ 가] . , 가 , .	

(30 ) :

(33 ) :

가

< - 19>

( )

<p>36 (가 ) 가 , · ( , · ), , · , 1 · 가 , 가 , 28 가 가 가 - -</p>	<p>36 (가 ) 가 , · ( , · ), , · , · , 1 · · , 1 ·</p>
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(36 ) :

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<p>23 ( )</p> <p>.</p> <p>가 가</p> <p>1 2 .</p> <p>82 1</p> <p>,</p> <p>2</p> <p>94. 1. 7</p>	<p>23 ( )</p> <p>.</p> <p>가 가</p> <p>1 2 .</p> <p>82 1</p> <p>,</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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- 39 -

9.

가

가





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## 1.

가.

(E-Textbook)

“ (2001. 6)” , ,

(E-Book)

PC, (E-textbook)

, (PDA, PCS )

•

goReader (www.goreader.com) goreader

Explore-Learning (www.explorelearning.com)

PC

( ; )

(E-Book)

PC, ,

PDA

가 .

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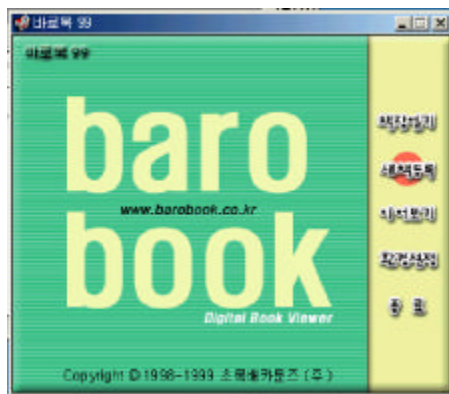
. PDA, PC

E-Book  
PC PDA  
(E-Book  
Viewer) (Bookmark),  
(www.dongsamo.co.kr)

# 1) PC E-Book

[ III- 1] [ III- 5]

( , , , )



[ - 1]  
(www.barobook.co.kr)



[ - 2]  
(www.wisebook.com/wisebook)





[ - 5] e (www.mijiro.co.kr/scripts/index.asp)

( < III- 1> ).

< - 1>

(www.barobook.co.kr)	(PBK, PBL, PBI)
(www.wisebook.com/wisebook)	(PDF, XML )
(dreambook.dreamwiz.com)	PDF, XML
(www.hiebook.com)	XML
e (www.mijiro.co.kr/scripts/index.asp)	

“ ”, “ ” ,  
 ( PC ) .  
 MP3 ( , , ),  
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E-Book ([ -6]).

(www.futureschool.co.kr)



[ -6] (www.eduebooks.com)

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(EasyM WHALE)

PDA

8.2

LCD

([ - 8]).



[ - 7]  
([www.dyenc.co.kr](http://www.dyenc.co.kr))



[ - 8]  
([www.easym.com](http://www.easym.com))

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가

PC

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## 1) PC

### 가) ExploreLearning.com

ExploreLearning (tool)

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(introductory-level college course)

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Macromedia Shockwave

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가 .

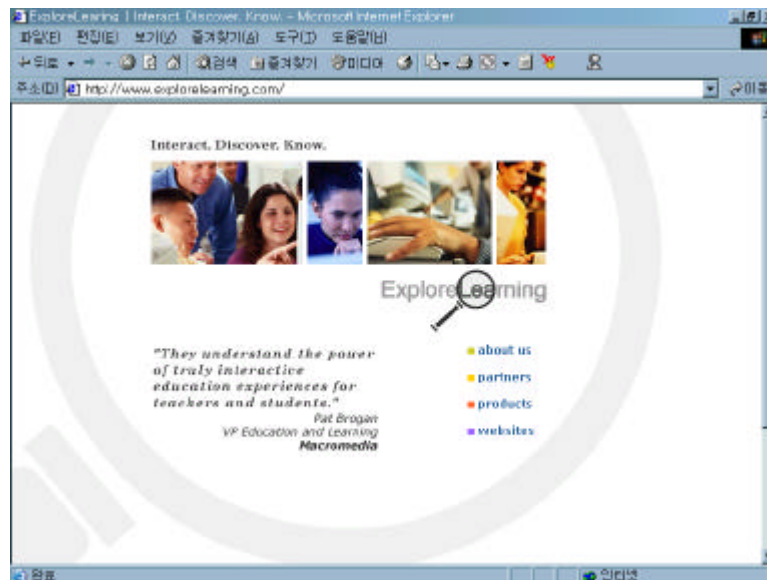
가 Progress Checking  
Homework .

가

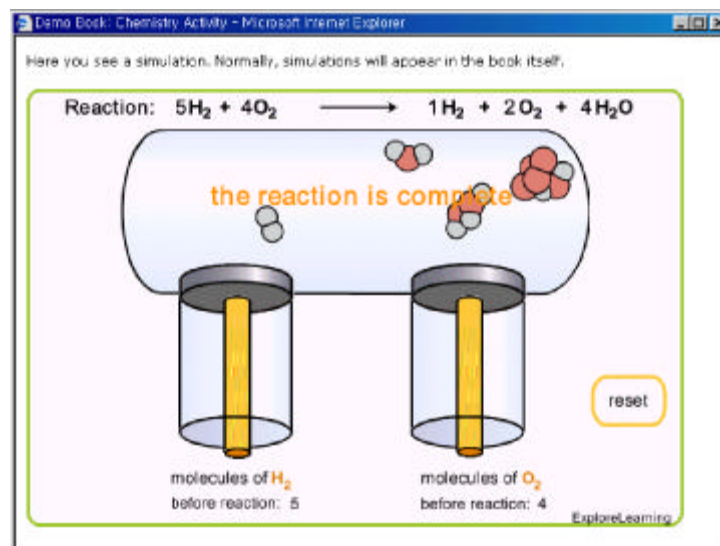
ExploreMath, ExploreScience

.





[ - 9] ExploreLearning  
(www.explorelearning.com)



[ - 10] ExploreLearning

## ) A Biography of AMERICA

Annenberg/CPB(www.learner.org)

(www.open.ac.uk)

( , ) , 90  
가 .

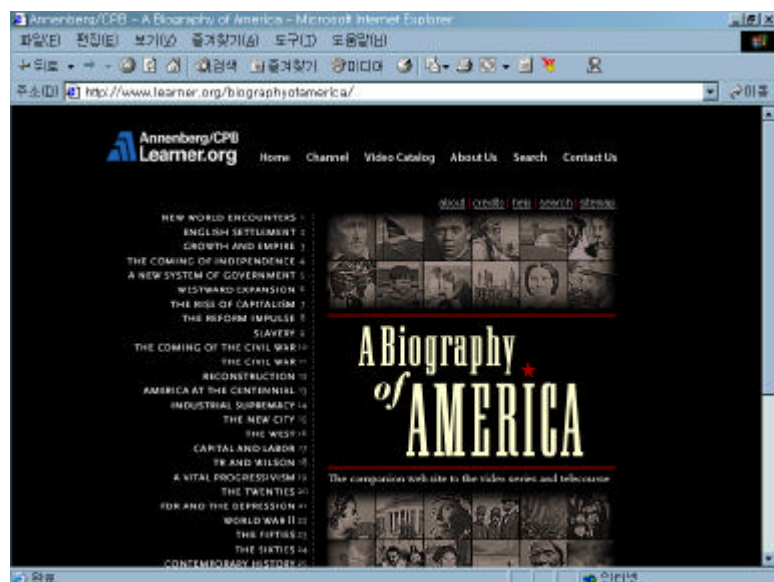
A Biography of America

A Biology of America 26

가 ([ - 11]).

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[ - 11] A Biography of America  
(http://www.learner.org/biographyofamerica/)

## ) Awesome Library

Awesome

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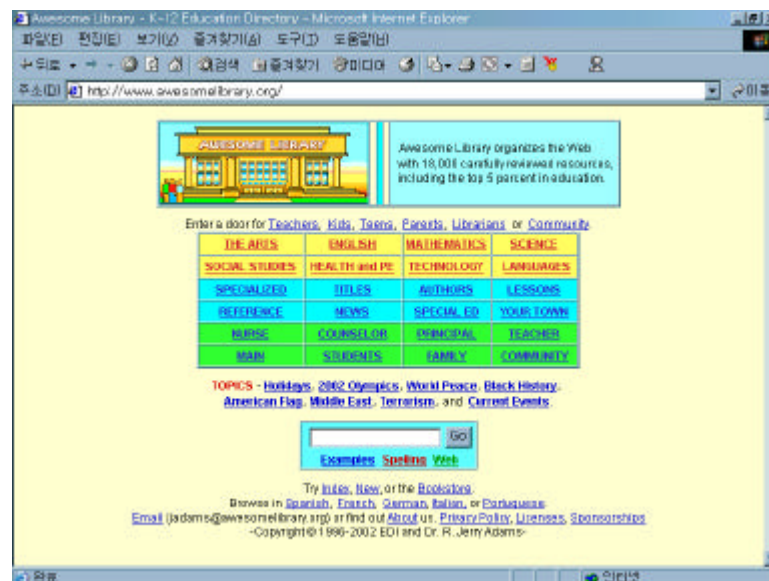
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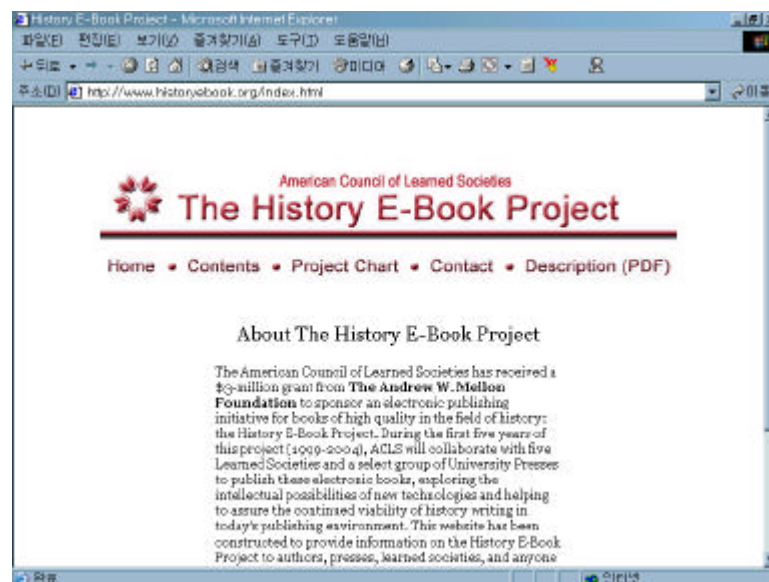
[ - 12] Awesome  
(www.awesomelibrary.org)

## ) The History E-Book Project

The History E-Book Project the America Council of Learned Societies가 1999 . 5 5 Learned Society

500 , 85 CD  
(historyebook.org) ([ - 13]).  
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ACLS



[ - 13] The History E-Book Project  
(www.historyebook.org/index.html)

) Rovia

Rovia

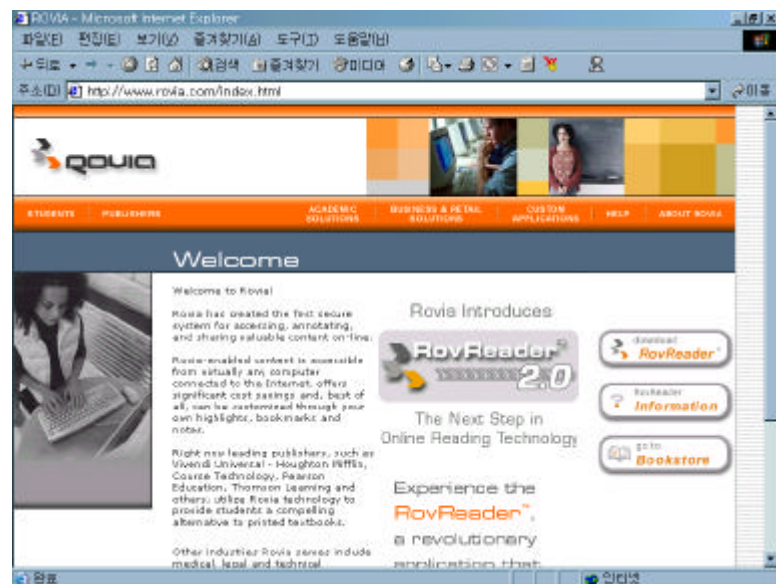
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([ - 14]).



[ - 14] Rovia  
(www.rovia.com/index.html)

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(bookstore)

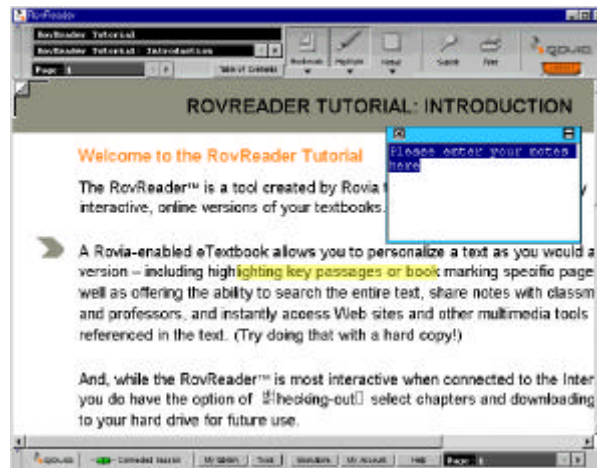
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Rovia 가

가 가

(table of contents)

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RovReader 2.0

## ) McGraw - Hill Learning Network

Virginia Celebration

2001 1

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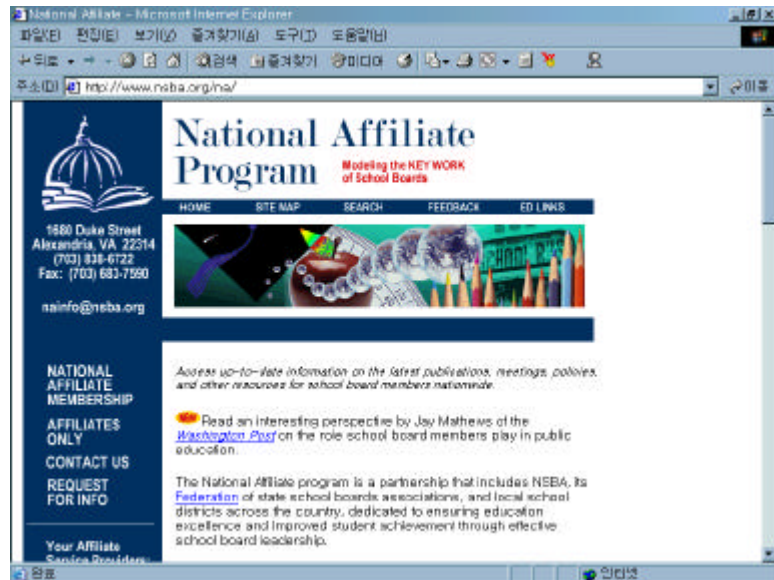
가

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([ - 16]).



[ - 16] McGraw - Hill Learning Network  
(www.nsba.org/na/ )

## ) Adobe E - textbook

(Adobe Systems Inc.)가

PDF

Acrobat

Adobe.com

2.2

S/W

가

가 가

가 ,

2)

가) goReader

goReader(www.goreader.com)

goReader  
'K-12', 'higher  
education', 'custom solutions'  
([ - 17]).



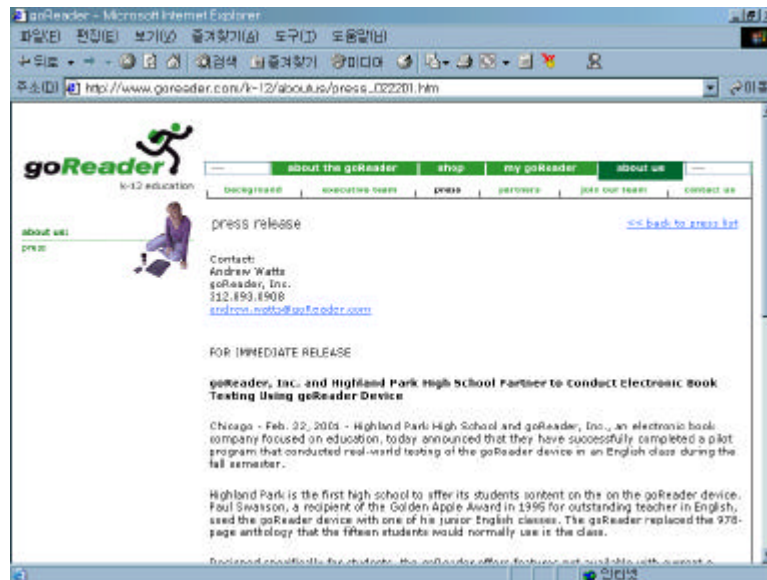
[ - 17] goReader  
(www.goreader.com)

goReader Highland Park, Chicago



## (1) Highland Park

Highland Park Swanson  
(junior English classes) (Amthology) 가  
978 . goReader  
7.3" × 9.7"  
(color lightening), , 가  
([ - 18]).



[ - 18] goReader K - 12  
(www.goreader.com/k-12/aboutus/press\_022201.htm)

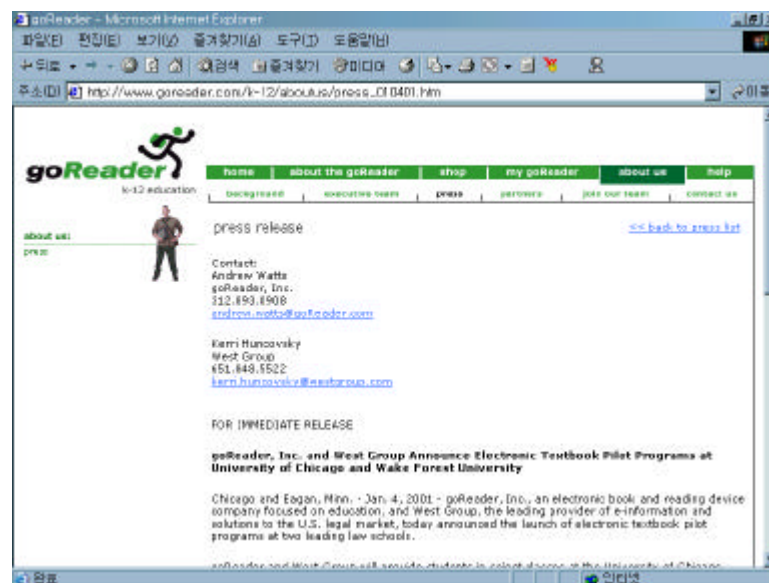
## (2) The University of Chicago, Law School

goReader West Group( ) Chicago  
Wake Forest .  
([ - 19]).  
가 .  
(E-casebook) . 1999 가

goReader

250

(multi-color highlighting) 가 ,



[ - 19] goReader Higher-Ed.  
(www.goreader.com/k-12/aboutus/press\_010401.htm)

### ) Malaysia E-school Project

2001 6 , 50 , 400  
650 Psion netBook( )  
([ - 20]).

netBook

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“e-learning” 가

가

, 2004

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가

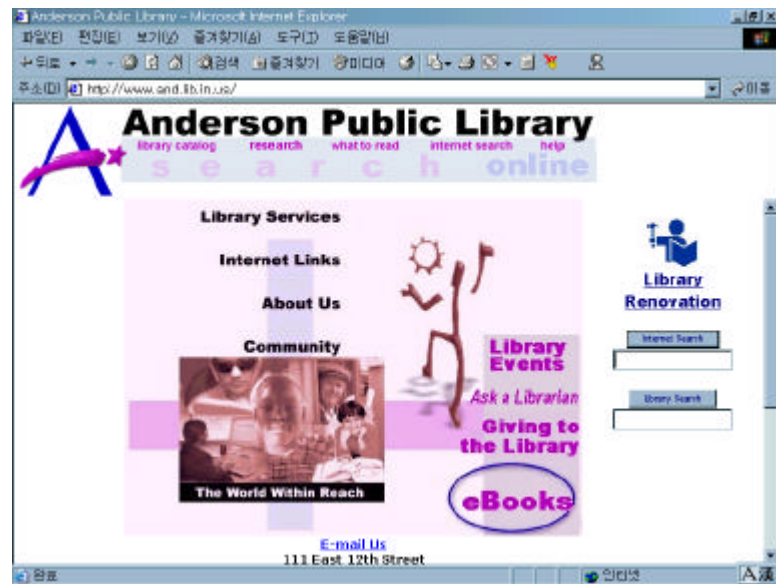


[ - 20] Malaysia netBook  
([ph.tech.lycosasia.com/ arts/tcwi/tcwipd/93.html](http://ph.tech.lycosasia.com/arts/tcwi/tcwipd/93.html))

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Psion netBook 가 .  
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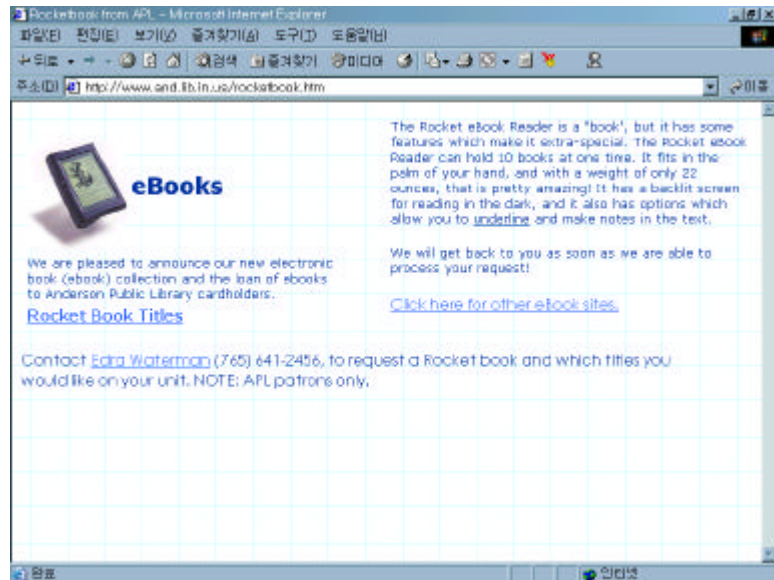
## ) Anderson Public Library



[ - 21] Anderson (www.and.lib.in.us/)

([ - 21]) (Rocket eBook Reader)

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[ III- 22] Anderson Rocket eBook Reader

# ) 가 IDA eduPAD Project

가 The Infocomm Development Authority of Singapore(IDA)

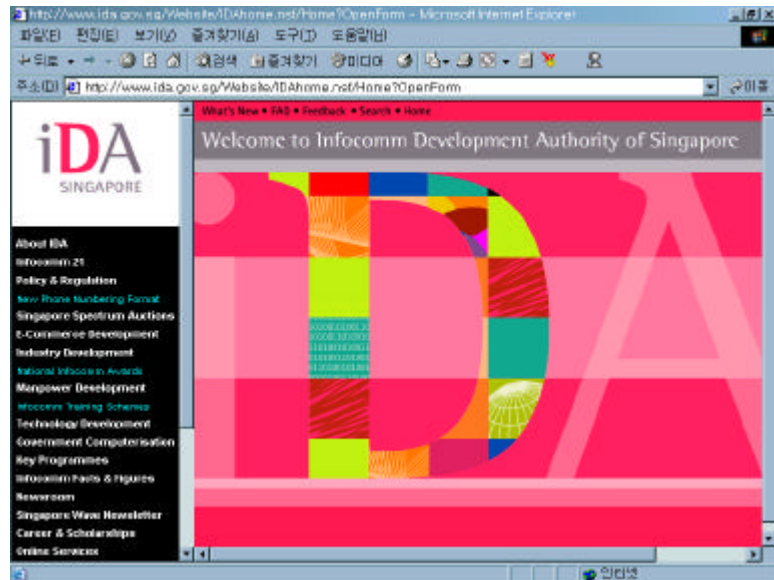
1999 . IDA

'New Economy' , E-government , IT

. IDA

eduPAD ([ - 23]).

eduPAD 3 .



[ - 23] 가 IDA  
(<http://www.ida.gov.sg/Website/IDAhome.nsf/Home?OpenForm>)

## Hi-Tech Teaching Techniques

eduPAD SCHIPS (School-Industry Partnership Scheme)  
 . SCHIPS , Kent  
 Ridge Labs (KRDL), S/W 가 CET Technologies Pte Ltd  
 (CET), H/W The Infocomm Development Authority  
 of Singapore (IDA) .

eduPAD , Dunman

가 .

## The eduPAD in Class

eduPAD (e-mailing quizzes) ,  
 , .  
 가 . eduPAD , 가  
 , 가  
 .

## Student's Point of View

,  
 , eduPAD  
 가  
 ,  
 ,  
 ,  
 .  
 .  
 Wallpaper , , MP3  
 ,  
 ,  
 . PC , ,  
 .  
 eduPAD  
 IT  
 가 , IT 가  
 가 .

## 2.

· , ,  
·  
· ISDN, ADSL, CATV (internet), LAN  
· , Wireless LAN, Bluetooth, IMT 2000  
· , eBook, PDA, PCS  
·

가.

### 1) ISDN

· , ,  
· ,  
· ,  
(ISDN: Integrated Service  
Digital Network)  
·  
ISDN

·  
·  
·  
· ISDN 가  
가

### 2) ADSL

ADSL(Asymmetric Digital Subscriber Line: 가  
) 88 社가 (VOD)



가

ADSL 가 가 가 , 가  
12Mbps , ADSL  
, VOD,

### 3) CATV

CATV CATV 가  
. CATV 가 CATV  
가 10M  
bps/s 가 . HFC(Hybrid  
Fiber Coaxial) TV  
, PC (VOD)

NSP(Network Service Provider)

. CATV



[ - 24] CATV

CATV  
가 가 TV

#### 4) LAN

LAN(Local Area Network : ) ( )

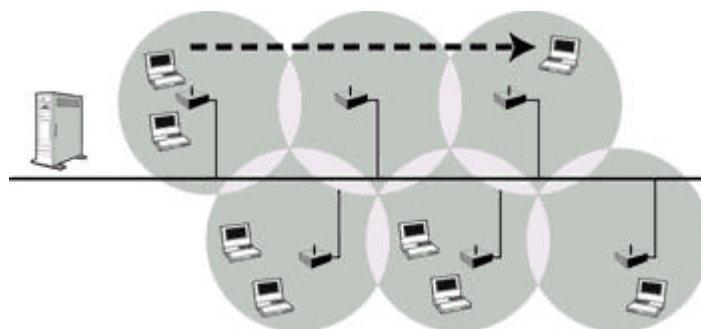
,  
.  
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.  
1Mbps  
.  
LAN  
.  
LAN  
H/W  
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.  
가  
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가 가  
가  
가  
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.

#### 1) Wireless LAN

LAN LAN  
, LAN 가 LAN

가 . 4 3 (beyond IMT - 2000)  
2Mbps

IMT - 2000 LAN PAN

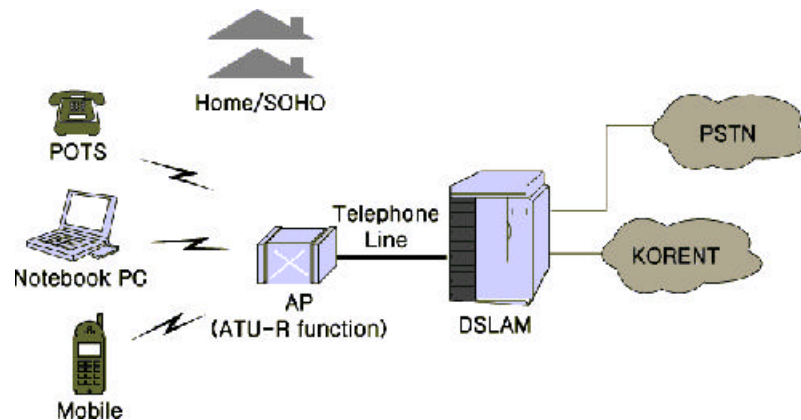


[ - 25] LAN

## 2) Bluetooth

(0.5 ), 가 (5 ),  
(100mW) , PC ,  
(10m 100m) (Radio  
Link, 2.4GHz ISM Open Band)  
(IrDA, Infrared Data Association 1.1)  
가 가 가

가 ‘ 3 ’ ,  
 , 가 USB  
 PC, 2001 13  
 , 가 Mobile ,  
 , 가 ,  
 가 가 ,  
 2005 가 32 .



[ - 26] Bluetooth ADSL

### 3) IMT - 2000

IMT - 2000(International Mobile Telecommunication- 2000) ITU  
 ITU-T 11

IMT - 2000

.  
 .  
 IMT - 2000  
 , 가  
 . IMT - 2000  
 , IMT - 2000 MPEG4  
 LSI . IMT - 2000  
 NTT - DoCoMo W - CDMA DDi, IDO cdma2000 2가  
 .  
 IMT - 2000  
 가 가 IMT - 2000  
 가 가 ,  
 2GHz PCS 가  
 가 IMT - 2000 가  
 . PCS  
 IMT - 2000 .  
 가 ( , ) 가  
 , (PCS, ) 가  
 가 2005 가  
 가 .

1) (E - Book)

Post PC  
 H/W S/W  
 , ,  
 가 가 가

. 2Byte ,  
 , .  
 가 Post PC 가  
 Micro Processor, LCD,  
 가 .  
 , 1998 10 (NIST: National  
 Institute of Standards and Technology)  
 . 1999 9 OEB (Open  
 eBook Publication Structure Specification ) 가 .  
 가  
 가 .  
 (EBK: Electronic Book of  
 Korea)  
 2001 6 XML EBKS 1.0 .  
 , , 가 ,  
 가  
 가 .  
 PC, PDA,  
 가 (Display)  
 (Viewer),  
 .  
 가 MS Reader Clear Type Font  
 Adobe Cool Type Font 가  
 Font Rendering Bitstream Agfa 가

TV,  
가 .

< -2>

Display	LCD	- : 150ppi - / : 200ppi
	Font Rendering	- Sub-Pixel - TrueType
		- -
Reader		- XML
		- /
	/	- 700g , A4
		- 12
		- USB Port - CDMA/Wireless Lan

## 2) PDA

PDA(Personal Digital Assistants)

가

,

,

가

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PDA

(Newton)

.

PDA

가

, PDA

IMT - 2000

가

.

PDA OS, WinCE, Palm OS  
(Embedded Linux) 가 .



[ -27] OS



[ -28] Win CE



[ -29] Palm OS



[ -30]

, , 1998 Palm OS  
Palm OS  
Palm OS ,



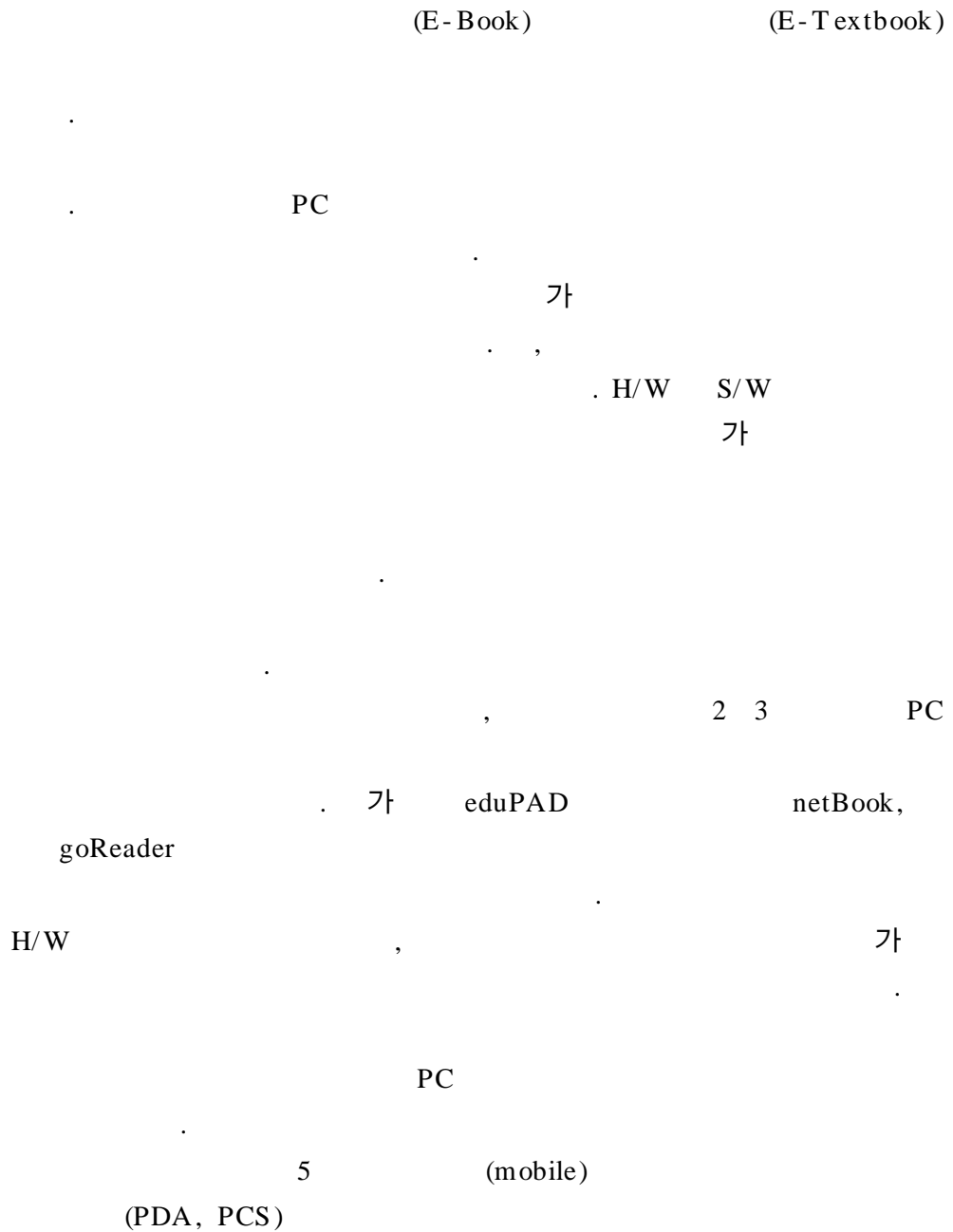
, , XG PDA  
 가 . PDA  
 ,  
 PDA (GSM, CDMA )  
 ,  
 PDA 가  
 .  
 PDA  
 , PC PDA, Web PDA SYNC(  
 )  
 .  
 LCD , 가  
 . , PDA  
 , CDMA/PCS, Digital Camera, MP3 Player, Voice  
 Recorder PDA가 .  
 PDA 가

### 3) PCS

PCS(Personal Communication System ; )  
 가 ,  
 . PCS  
 20Km  
 가 가 . ,  
 가 ,  
 .  
 PCS

900MHz 3MHz (narrowband)  
 PCS 1.8 2.2GHz 160MHz (broadband) PCS  
 . PCS ,  
 ,  
 . PCS ,  
 , , LAN  
 .  
 PCS ,  
 가  
 가 . 가 ,  
 가

### 3.



·  
(market)  
,  
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·  
가  
·  
PC H/W S/W , (life cycle)  
·  
H/W S/W 가  
,  
·  
가  
가  
·  
가  
·  
(Protocol) IPv6 가  
·  
가 PCS 가  
PCS PC 가  
·  
가



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## 1.

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(PC  
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) H/W S/W  
- 가  
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1 2  
H/W S/W  
가 H/W S/W  
, H/W  
H/W  
S/W  
H/W 1 2  
1  
H/W  
H/W가 S/W H/W 가  
H/W H/W

S/W H/W,  
(< IV - 1>)

(< IV - 2>)

< - 1>

				( )
H/W				
S/W	OS ( )			
		ISDN, CATV, ADSL		
		LAN		
		Wireless LAN		
		Bluetooth		
	( )	( , , )		
		( , , )		
		· ( , , )		
		( , , )		
	( )			
	, ( ' , , )'			
	H/W			
		(Update)		
		(Update)		
	H/W, S/W			
		·		
		· · 7(update)		

< - 1> ( )

				( )
		Drill and Practice, Tutorial, Simulation, Game, Presentation, Project Base Learning, Cooperative Learning		
		, ,		
	가	, , ,		
		가 , ,		
		(DB) ,		

< -2>



, 가

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< -4> .



< - 3 >

PC ( +)	· · · · ·가 , ,	· · · , ·H/W ·H/W, S/W ·H/W, S/W · LAN	·H/W, S/W LAN
PC ( +)	· · · ·가 , ,	· · · , ·H/W ·H/W, S/W ·H/W, S/W · LAN 가	·H/W, S/W LAN
+	· 가 · · , ·H/W · ·H/W, S/W ·H/W, S/W 가 · LAN	· · ·가 , ,	·H/W, S/W LAN 가 ·

< -4> .

<ul style="list-style-type: none"> <li>· + +</li> <li>· ,</li> <li>·</li> <li>·</li> <li>·</li> </ul>	<ul style="list-style-type: none"> <li>· PC, + ·</li> <li>· 가 + 가</li> <li>·</li> <li>·</li> </ul>

H/W

· , (7 )

10% ICT

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·

가

· ( ) , H/W S/W

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가

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## 2. -

H/W

< IV-4>  
PC  
가 가

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가.

+	+
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1)

가) ( )

H/W S/W , H/W

S/W

H/W : ( )

S/W : H/W 가/ S/W

가가

: , 가( / ),

) ,

가 H/W, S/W

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H/W, S/W :  
: 가  
· : ,  
가 가  
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H/W, S/W :  
: 가  
H/W  
H/W  
· H/W S/W  
H/W 가 S/W  
가 가 ,  
, 가  
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( )  
가  
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( )  
- 가( / ) : 가 가  
가  
- : H/W S/W 가  
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2)

가) 1

3가

2가

H/W

S/W

가

가

H/W S/W

< -5>

< -5>

: 1

H/W, S/W	/ 가/ S/W H/W,	
	/ 가 H/W, S/W	

) 2

·  
 3 , H/W·  
 S/W 가 ,  
 가  
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 가

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 (< -6> ).

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	H/W S/W 가	S/W 가 H/W,	
( )		·	·
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· ·

(PC ) + · +
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1)

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가

2) 가

가) PC  
S/W PC S /W

가 , PC  
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3)

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가  
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가 가

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H/W, S/W		/ 가/ S/W H/W,	
			PC
	H/W S/W 가		
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		가/	





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가

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S/W

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가

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		/	/ , /
A/S	H/W 가 /	A/S /	H/W 가 /
	PC		
	/		

< -8>

가 ( )

	: , :		가
	H/W : /	S/W : /	

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 1) .  
 가 , 가  
 가 , 가  
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 H/W가 가 ,  
 가 , ,  
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 H/W  
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 H/W 가 .  
 H/W 3 , , . H/W  
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 가  
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 H/W S/W 가 .  
 , ,  
 CD-ROM  
 ,

가 가

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· , CD-ROM  
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2)

·  
· , 가  
가

· (2000)  
(monitoring) 가

·  
· H/W  
가

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가

가

5)

A/S

H/W S/W

가

가

A/S가

A/S

가

A/S

A/S

, CD-ROM,

A/S

A/S

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A/S

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8) (upgrade)

2-3

H/W S/W

H/W

S/W

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## 1.

가.

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e-mail

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2001 12 17 12 20

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2

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2001 12 21 12 24

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699

< - 1>

< - 4>

 $\angle$ 
$$-2 > -4$$

	207	29.6	109	40.3
	113	16.2	45	16.6
	90	12.9	29	10.7
	204	29.2	58	21.4
	58	8.3	9	3.3
	27	3.9	21	7.7
	699	100.0	271	100.0

	( )	(%)	
30	35	12.9	12.9
30 40	135	49.8	62.7
40 50	73	26.9	87.7
50	28	10.3	100.0
	271	100.0	

< -3>

	( )	(%)	
	223	82.3	82.3
	48	17.7	100.0
	271	100.0	

< -4>

	( )	(%)	
1.	109	40.2	40.2
2. ( , )	45	16.6	56.8
3.	29	10.7	67.5
4. (H/W, S/W, E-book, )	58	21.4	88.9
5.	9	3.3	92.3
6.	21	7.7	100.0
	271	100.0	

.

, SPSS for

Windows(v.10.0)

.

.

## 2.

가.

1)

가

(271 ) 74.9% (203 )가 ‘ ,

. ,

. , (223 )

78.2% (174 )가 ‘ , (48 )

60.4% (29 )가 ‘ , .

25.0% (12 )가 ‘ ,

4.0% ((9 )가 ‘ , <

-5> .

< -5> ( )

	( )	174	29	203
	%	85.7	14.3	100.0
	%	78.0	60.4	74.9
	%	64.2	10.7	74.9
	( )	40	7	47
	%	85.1	14.9	100.0
	%	17.9	14.6	17.3
	%	14.8	2.6	17.3
	( )	9	12	21
	%	42.9	57.1	100.0
	%	4.0	25.0	7.7
	%	3.3	4.4	7.7

, < 6> 30

35 60.0% (21 ) 30 40 135

73.3% (99 ), 40 50 73 83.6% (61 )

< - 6> ( )

		30	30 40	40 50	50	
	( )	21	99	61	22	203
	%	10.3	48.8	30.0	10.8	100.0
	%	60.0	73.3	83.6	78.6	74.9
	%	7.7	36.5	22.5	8.1	74.9
	( )	6	25	10	6	47
	%	12.8	53.2	21.3	12.8	100.0
	%	17.1	18.5	13.7	21.4	17.3
	%	2.2	9.2	3.7	2.2	17.3
	( )	8	11	2		21
	%	38.1	52.4	9.5		100.0
	%	22.9	8.1	2.7		7.7
	%	3.0	4.1	.7		7.7

< - 7>

가 109

70.6% (77 ) 80.0% (36 ),

82.8% (24 )

77.6% (45 ) ,

44.4% (4 ) 가 가

.

.

‘ ,

203 가

(2가 ) ‘

가 , 가 106 가 ‘

가 ,

가 99 , ‘ ’(47 ), ‘ ’(60 ), ‘ 가 ’(54 ), ‘ ’(24 ) .

< -7> ( )

		1	2	3	4	5	6	
	( )	77	36	24	45	4	17	203
	%	37.9	17.7	11.8	22.2	2.0	8.4	100.0
	%	70.6	80.0	82.8	77.6	44.4	81.0	74.9
	%	28.4	13.3	8.9	16.6	1.5	6.3	74.9
	( )	22	9	4	8	2	2	47
	%	46.8	19.1	8.5	17.0	4.3	4.3	100.0
	%	20.2	20.0	13.8	13.8	22.2	9.5	17.3
	%	8.1	3.3	1.5	3.0	.7	.7	17.3
	( )	10		1	5	3	2	21
	%	47.6		4.8	23.8	14.3	9.5	100.0
	%	9.2		3.4	8.6	33.3	9.5	7.7
	%	3.7		.4	1.8	1.1	.7	7.7

- 1.
2. ( , )
- 3.
4. ( , H/W, S/W, E-book)
- 5.
- 6.

‘ , 47  
(2가  
) ‘ 가 , 가 31  
가 ‘  
, 가 18  
, ‘ H/W ’가 9  
.

2)

가  
74.9%

(203 )가 ‘ ,  
 ,  
 20.3% (55 ) .

< -8>

	( )	(%)	
	55	20.3	20.3
	203	74.9	95.2
	13	4.8	100.0
	271	100.0	

< -9> ( )

		1	2	3	4	5	6	
	( )	13	10	8	18	3	3	55
	%	23.6	18.2	14.5	32.7	5.5	5.5	100.0
	%	11.9	22.2	27.6	31.0	33.3	14.3	20.3
	%	4.8	3.7	3.0	6.6	1.1	1.1	20.3
	( )	93	31	20	36	6	17	203
	%	45.8	15.3	9.9	17.7	3.0	8.4	100.0
	%	85.3	68.9	69.0	62.1	66.7	81.0	74.9
	%	34.3	11.4	7.4	13.3	2.2	6.3	74.9
	( )	3	4	1	4		1	13
	%	23.1	30.8	7.7	30.8		7.7	100.0
	%	2.8	8.9	3.4	6.9		4.8	4.8
	%	1.1	1.5	4	1.5		4	4.8

- 1.
2. ( , )
- 3.
4. ( , H/W, S/W, E-book)
- 5.
- 6.

. <

-9>

, 85.3%  
 , 가 ,



62.1 69.0%

가

1)

(2 3 )

가

PC 38.0% (103 ), 24.4%

(66 ), e-Book

19.2% (52 ),

PDA 15.1%

(41 ),

2.2% (6 )

PC

가

< - 10>

	( )	(%)	
PC	103	38.0	38.0
	66	24.4	62.4
e-Book	52	19.2	81.5
(PDA )	41	15.1	96.7
	6	2.2	98.9
	3	1.1	100.0
	271	100.0	

< - 11>

가

PC

42.3% 가

22.0%,

22.0%

37.8%가

PC 35.6%

< - 11> ( )

		1	2	3	4	5	6	
PC	( )	46	16	10	21	3	7	103
	%	44.7	15.5	9.7	20.4	2.9	6.8	100.0
	%	42.2	35.6	34.5	36.2	33.3	33.3	38.0
	%	17.0	5.9	3.7	7.7	1.1	2.6	38.0
	( )	24	17	6	15	1	3	66
	%	36.4	25.8	9.1	22.7	1.5	4.5	100.0
	%	22.0	37.8	20.7	25.9	11.1	14.3	24.4
	%	8.9	6.3	2.2	5.5	.4	1.1	24.4
e- Book	( )	24	5	4	11	1	7	52
	%	46.2	9.6	7.7	21.2	1.9	13.5	100.0
	%	22.0	11.1	13.8	19.0	11.1	33.3	19.2
	%	8.9	1.8	1.5	4.1	.4	2.6	19.2
(PDA )	( )	13	6	8	7	4	3	41
	%	31.7	14.6	19.5	17.1	9.8	7.3	100.0
	%	11.9	13.3	27.6	12.1	44.4	14.3	15.1
	%	4.8	2.2	3.0	2.6	1.5	1.1	15.1
	( )	1	1	1	3			6
	%	16.7	16.7	16.7	50.5			100.0
	%	.9	2.2	3.4	5.2			2.2
	%	.4	.4	.4	1.1			2.2
	( )	1			1		1	3
	%	33.3			33.3		33.3	100.0
	%	.9			1.7		4.8	1.1
	%	.4			.4		.4	1.1

1. 2. ( , )  
3. 4. ( , H/W, S/W, E-book)  
5. 6.

, < - 12> (5 )

가

32.5% (88 ) e- Book 31.0% (84 )  
21.4% (58 ) PC가 7.4% (20 )

< - 12> (5 )

	( )	(%)	
PC	20	7.4	7.4
	58	21.4	28.8
e- Book	84	31.0	59.8
(PDA )	88	32.5	92.3
	17	6.3	98.5
	4	1.5	100.0
	271	100.0	

< - 13>

가 . ,

.

< - 13> (5 ) ( )

		1	2	3	4	5	6	
PC	( )	9	2	2	5	1	1	20
	%	45.0	10.0	10.0	25.0	5.0	5.0	100.0
	%	8.3	4.4	6.9	8.8	11.1	4.8	7.4
	%	3.3	.7	.7	1.8	.4	.4	7.4
	( )	33	10	5	7	1	2	58
	%	56.9	17.2	8.6	12.1	1.7	3.4	100.0
	%	30.3	22.2	17.2	12.1	11.1	9.5	21.4
	%	12.2	3.7	1.8	2.6	.4	.7	21.4
e- Book	( )	30	18	11	16	4	5	84
	%	35.7	21.4	13.1	19.0	4.8	6.0	100.0
	%	27.5	40.0	37.9	27.6	44.4	23.8	31.0
	%	11.1	6.6	4.1	5.9	1.5	1.8	31.0
(PDA )	( )	33	10	10	25	1	9	88
	%	37.5	11.4	11.4	28.4	1.1	10.2	100.0
	%	30.3	22.2	34.5	43.1	11.1	42.9	32.5
	%	12.2	3.7	3.7	9.2	.4	3.3	32.5

< - 13> (5 ) ( ) ( )

	1	2	3	4	5	6	
( )	2			1		1	4
%	50.0			25.0		25.0	100.0
%	1.8			1.7		4.8	1.5
%	.7			.4		.4	1.5

1. 2. ( , )  
3. 4. ( , H/W, S/W, E-book)  
5. 6.

< - 14>

, 27.3% (74 )가 ‘  
, 1 , ‘ , 1  
20.7% (56 ) .

< - 14>

1		2		3	
(74 )	27.3	(52 )	19.2	(46 )	17.0
(56 )	20.7	(45 )	16.6	(45 )	16.6
(45 )	16.6	(44 )	16.2	(43 )	15.9

2)  
가 가  
, ,  
57.2% (155 ) 가 . 32.5% (88 ) ,  
9.6% (26 ) .

< - 15>

	( )	(%)	
	26	9.6	9.6
	88	32.5	42.1
	155	57.2	99.3
	2	.7	100.0
	271	100.0	

< - 16>

. , 109 62 (56.9%)  
, 37 (42.0) , 45  
24 (53.3%) , 15 (17.0%)  
, 29 , 16 (55.2%)  
7 (24.1%) .

< - 16> ( )

	( )							
		1	2	3	4	5	6	
	( )	10	6	5	4	1		26
	%	38.5	23.1	19.2	15.4	3.8		100.0
	%	9.2	13.3	17.2	6.9	11.1		9.6
	%	3.7	2.2	1.8	1.5	.4		9.6
	( )	37	15	7	23	3	3	88
	%	42.0	17.0	8.0	26.1	3.4	3.4	100.0
	%	33.9	33.3	24.1	39.7	33.3	14.3	32.5
	%	13.7	5.5	2.6	8.5	1.1	1.1	32.5
	( )	62	24	16	30	5	18	155
	%	40.0	15.5	10.3	19.4	3.2	11.6	100.0
	%	56.9	53.3	55.2	51.7	55.6	85.7	57.2
	%	22.9	8.9	5.9	11.1	1.8	6.6	57.2

< - 16> ( ) ( )

	1	2	3	4	5	6	
( )			1	1			2
%			50.0	50.0			100.0
%			3.4	1.7			.7
%			.4	.4			.7

- 1.
2. ( , )
- 3.
4. ( , H/W, S/W, E-book)
- 5.
- 6.

3)

가 가  
 ( 가 ) 84.1(228 ) ‘  
 , , ‘ ,  
 ‘ , 70.5% (191 ) 69.4% (188 )  
 . ‘ , 57.6% (156 )  
 가

< - 17>

	( )	(%)
	228	84.1
	191	70.5
	188	69.4
	156	57.6
	28	10.3
	12	4.4

.

1)

( ) 193 (71.2%) ,  
185 (68.3%) , 131 (48.7%)

.

.

,

< - 18>

193 (71.2%)	185 (68.3%)	132 (48.7%)

< - 19>

-

가

,

( )' 75.3% (204 ) 가

,

14.4% (39 ),

-

8.9% (24 )

.

(205 )가

가 가

.

< - 19>

	(%)	(%)	
	39	14.4	14.4
-	24	8.9	23.2
( )	204	75.3	98.5
	4	1.5	100.0
	271	100.0	

2)

98.9% (268 )  
0.4% (1 )

< -20>

	( )	(%)	
	268	98.9	98.9
	1	.4	99.3
	2	.7	100.0
	271	100.0	

< -21>

( )

		30	30 40	40 50	50	
	( )	35	133	72	28	268
	%	13.1	49.6	26.9	10.4	100.0
	%	100.0	98.5	98.6	100.0	98.9
	%	12.9	49.1	26.6	10.3	98.9
	( )		1			1
	%		100.0			100.0
	%		.7			.4
	%		.4			.4
	( )		1	1		2
	%		50.0	50.0		100.0
	%		.7	1.4		.7
	%		.4	.4		.7



< - 22> ( )

		1	2	3	4	5	6	
	( )	107	45	29	57	9	21	268
	%	39.9	16.8	10.8	21.3	3.4	7.8	100.0
	%	98.2	100.0	100.0	98.3	100.0	100.0	98.9
	%	39.5	16.6	10.7	21.0	3.3	7.7	98.9
	( )	1						1
	%	100.0						100.0
	%	.9						.4
	%	.4						.4
	( )	1			1			2
	%	50.0			50.0			100.0
	%	.9			1.7			.7
	%	.4			.4			.7

- 1.
2. ( , )
- 3.
4. ( , H/W, S/W, E-book)
- 5.
- 6.

< - 23>

, 44.6% (121 )가 가  
, 22.5% (61 )가 ,  
17.0% (46 )가 ,  
9.6% (26 ) . ,  
, .

< - 23>

	( )	(%)	
	26	9.6	9.6
	46	17.0	26.6
가	121	44.6	71.2
	61	22.5	93.7
	17	6.3	100.0
	271	100.0	

< - 24>

가 50.2% (136 )가 가  
가  
(18.5%),  
(16.6%),  
(12.5%)

< - 24>

	( )	(%)	
	34	12.5	12.5
	45	16.6	29.2
가	136	50.2	79.3
	50	18.5	97.8
	6	2.2	100.0
	271	100.0	

< - 25>

30 35  
34.3% (12 ) ‘  
‘ 가 ,  
50% 1 .

< - 25>

( )

		30	30 40	40 50	50	
	( )	2	18	9	5	34
	%	5.9	52.9	26.5	14.7	100.0
	%	5.7	13.3	12.3	17.9	12.5
	%	.7	6.6	3.3	1.8	12.5
	( )	10	24	7	4	45
	%	22.2	53.3	15.6	8.9	100.0
	%	28.6	17.8	9.6	14.3	16.6
	%	3.7	8.9	2.6	1.5	16.6
가	( )	10	68	44	14	136
	%	7.4	50.0	32.4	10.3	100.0
	%	28.6	50.4	60.3	50.0	50.2
	%	3.7	25.1	16.2	5.2	50.2
	( )	12	22	11	5	50
	%	24.0	44.0	22.0	10.0	100.0
	%	34.3	16.3	15.1	17.9	18.5
	%	4.4	8.1	4.1	1.8	18.5
	( )	1	3	2		6
	%	16.7	50.0	33.3		100.0
	%	2.9	2.2	2.7		2.2
	%	.4	1.1	.7		2.2

< - 26>

, ,

50%

‘

가

, 1

‘

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(25.7%, 28 )

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< - 27>

‘

‘ (42.8%, 116 ) ’

‘

(41%, 111 )

.

< - 26 >

( )

		1	2	3	4	5	6	
	( )	8	9	5	8		4	34
	%	23.5	26.5	14.7	23.5		11.8	100.0
	%	7.3	20.0	17.2	13.8		19.0	12.5
	%	3.0	3.3	1.8	3.0		1.5	12.5
	( )	15	6	2	15	2	5	45
	%	33.3	13.3	4.4	33.3	4.4	11.1	100.0
	%	13.8	13.3	6.9	25.9	22.2	23.8	16.6
	%	5.5	2.2	.7	5.5	.7	1.8	16.6
가	( )	55	24	19	23	6	9	136
	%	40.4	17.6	14.0	16.9	4.4	6.6	100.0
	%	50.5	53.3	65.5	39.7	66.7	42.9	50.2
	%	20.3	8.9	7.0	8.5	2.2	3.3	50.2
	( )	28	5	1	12	1	3	50
	%	56.0	10.0	2.0	24.0	2.0	6.0	100.0
	%	25.7	11.1	3.4	20.7	11.1	14.3	18.5
	%	10.3	1.8	.4	4.4	.4	1.1	18.5
	( )	3	1	2				6
	%	50.0	16.7	33.3				100.0
	%	2.8	2.2	6.9				2.2
	%	1.1	.4	.7				2.2

- 1.
2. ( , )
- 3.
4. ( , H/W, S/W, E-book)
- 5.
- 6.

< - 27 >

	( )	(%)	
	116	42.8	42.8
	28	10.3	53.1
	111	41.0	94.1
	16	5.9	100.0
	271	100.0	

< - 28>

· 2 3  
36.9% (100 가  
, 33.6% (91 ) 가 가  
, 23.2% (63 )가 가  
2 3  
·

< - 28>

	( )	(%)	
가 2 3	63	23.2	23.2
· 2 3	100	36.9	60.1
가	91	33.6	93.7
	17	6.3	100.0
	271	100.0	

3)

2가  
,  
- '(143 , 52.8%) ' -  
'(116, 42.8%)가 가  
83 30.6%가 .

< -29>

	( )	(%)
-	143	52.8
-	116	42.8
	83	30.6
	79	29.2
	76	28.0
	39	14.4

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62.4%, 69.1% .  
(45.4%), (32.8%), (29.2%), (26.9%)

< - 30>

	( )	(%)
	172	63.5
	169	62.4
	163	60.1

2)

(2 3 ) , 가

< - 31>

	( )	(%)	
	271	100.0	100.0

, < - 32> 5  
가

· , e- Book  
22.9% (62 ) 가 ,  
, e- Book  
가 21.8% (59 )

18.8% .

< - 32> (5 )

	( )	(%)	
1.	51	18.8	18.8
2. , e-Book	62	22.9	41.7
3. CD-ROM,	16	5.9	47.6
1. 2.가	59	21.8	69.4
1. 3	27	10.0	79.3
2. 3	8	3.0	82.3
1. 2. 3	48	17.7	100.0
	271	100.0	

### 3.

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가 (74.9%). ,  
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가  
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가 . H/W  
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(74.9% ).  
(85.3% ). ,  
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가 .

, (2 3 ) PC

, (5 ) (PDA) e-Book

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(E-Book, PDA, )

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(E-Book, PDA, ) PC

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Post PC PC

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S/W가 가

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PC( )

(E-Book, PDA, ) Post PC

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2000. 12

			( )
(10,064 )	·	·PC 431,981	321,800
	· 4	·10,064	26,300
	· 5		
(214,000 )	·	·PC 115,987	600,800
		·	
(340,000 )	·1 1PC	·PC 340,854	253,600
		·PC 888,822	1,439,600

(2001. 5)

PC PC 1 8 , PC  
 5%가 486 가 22  
 2 ( PC 1/4) PC가 , 44 4 ( PC 1/2) PC가 . 512Kbps  
 가 55.5% .

.

PC PC 1 1  
 , < - 2>  
 . , 10,064 , 7,831 ,  
 340 .

< -2>

			( )
	<ul style="list-style-type: none"> <li>•CPU : 4 * 500MHz</li> <li>•Memory : 2GB</li> <li>•HDD : 200GB</li> <li>•Giga Bit</li> </ul>		50,000
PC	<ul style="list-style-type: none"> <li>•CPU : Pentium IV 1GHz</li> <li>•Memory : 128MB</li> <li>•HDD : 30GB</li> <li>• /</li> </ul>		1,000
	• ( )		30,000
/	<ul style="list-style-type: none"> <li>•Pubnet 2Mbps</li> <li>2Mbps</li> </ul>		400
(E-Book, PDA )	<ul style="list-style-type: none"> <li>•LCD( ) : 5.6"</li> <li>•LCD( ) : 640 x 480</li> <li>•LCD(color) : 64K color</li> <li>•Memory : 32MB</li> <li>•HDD : 32MB</li> <li>• : 500g</li> <li>• : 12</li> <li>• /</li> </ul>		350
Post PC	<ul style="list-style-type: none"> <li>•Memory : 64MB</li> <li>•HDD : 30GB</li> <li>• /</li> </ul>		600

PC

1 PC 1 1

,  
 . , PC PC , PC  
 . 가 5  
 .  
 (10,064 )× 가 (50 )  
 5,032 . , PC 가  
 PC (7,283 )×PC가 (1 ) 7,283,000  
 . , PC .  
 PC (666 )×PC가 (1 )×5 33,300

$(10,064) \times$   
 $(30) \times 301,900$   
 $\text{가} (10,064) \times (0.4) \times$   
 $12) \times 5 \quad 241,500 \quad \text{가}$

< -3> PC

		( )
	$(10,064) \times \text{가} (50)$	5,032
PC	$\text{PC} (7,283) \times \text{PC} \text{가} (1)$	72,830
PC	$\text{PC} (666) \times \text{PC} \text{가} (1) \times 5$	33,300
	$(10,064) \times (30)$	3,019
	$(10,064) \times (4.8) \times 5$	2,415
		116,597

PC

$\text{PC}$   
 $+ (8,171) \times (0.35)$   
 $2,859,900$

< -4>

		( )
	$(10,064) \times \text{가} (50)$	503,200
	$+ (8,171) \times (35)$	2,859,900
PC	$\text{PC} (666) \times \text{PC} \text{가} (1) \times 5$	3,330,000
	$(10,064) \times (30)$	301,900
	$(10,064) \times (4.8) \times 5$	241,500
		7,236,500

PC

Post PC

$\text{PC}$   
 $\text{PC} \text{ Post PC}$   
 $\text{PC} (7,283) \times \text{Post PC} (0.6)$   
 $4,369,800$

< -5> Post PC

		( )
	$(10,064) \times \text{가} (50)$	503,200
Post PC	$\text{PC} (7,283) \times \text{Post PC}(60)$	4,369,800
PC	$\text{PC} (666) \times \text{PC 가} (1) \times 5$	3,330,000
	$(10,064) \times (30)$	301,900
	$(10,064) \times (4.8) \times 5$	241,500
		8,746,500

PC

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가		가		
	가	( )	가	
(100 )	840,293		8.4	
(100 )	2,327,040		23.3	
(1,000 )	2,931,316		29.3	10
(10 )	805,158		1,207.7	15
(10 )	884,403		884.4	10
	1,011,204		1,011.2	

1 2 가  
(  
×3 )

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/							
-3-1	26	217	83	231	71	102	137,372
-3-2	28	67	28	6	24	41	44,324
-3-1	39	53	10	105	35	22	38,037
-3-2	47	35	7	7	16	5	7,328
-3-1	337	348	3	81	6	122	133,789
-3-2	222	-	-	19	14	37	40,965
-3	106	27	12	38	31	25	32,625
-3	-	-	-	8	8	32	34,032



< -7> ( ) ( ) ( )

/							
- 3	18	39	1	105	11	13	26,810
-3- 1	115	232	179	48	22	45	53,315
-3- 2	107	15	51	33	3	11	15,388
-3- 1	39	132	2	18	14	66	70,185
-3- 2	9	63	-	4	8	33	34,575
- 3	84	340	187	22	5	38	41,616
	84	112	40	52	19	42	50,740

, S/W  
(Man/Month) ,

가 .

< -8>

가 .

< -8> 가 ( )

	가	
1 /2	96.2	
2 /6	70.9	
	842.6	× 2.5

1 2 가  
( × 2.5 ) ,

< -9>

1

68 .

1

50 68

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( )

( )

/			
- 3	95	80,054	
- 3	80	67,414	
- 3	56	47,190	
- 3	95	80,054	
	82	68,678	

< - 10 >

	1	2	3	4	5	6	
	18	18	24	24	23	23	82
	1		2				
	16		28		37		
	1		2				
( )	4		11		12		
	1		-		1		
	43		-		36		

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232

가

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11,600

15,776

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	1	50	
PC	1,144	1,144	32 , 1,216 , 1 (40 )
		30	
	12	4.8	
	12	10	
		1,238.8	

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 64 , 79,283  
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	1,000	(60 )
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	6,000	2 (10 (180 × 3 ) )
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11,659,700	,	7,236,500	, Post PC
8,746,500	,	,	
PC	.		
	1	50	68
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11,600	15,776		.
		1,238	64
	79,283		.
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145,100		.	



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- , (1998. 12), , 가
- , , (1998), ( ),
- (1997. 3), (Media) .
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- (1997. 3), (Media) .
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- (1998. 11),
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- (1999. 3), (Media) .
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- (2000. 3), (Media) .
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- (2000. 6), 2001 ( ),
- (2000. 12), ,
- (2001. 5),
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- (2001), ICT ,
- (2001), 2001

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 , Vol. 3 No. 10, 2000. 3. 30  
 (2000. 5), "IMT-2000 ( 1 )“,  
 , Vol. 3 No. 17, 2000. 5. 25  
 (2000. 6), "IMT-2000 ( 2 )“,  
 , Vol. 3 No. 20, 2000. 6. 29  
 (2000. 8), “ADSL ”,  
 , Vol. 3 No. 24, 2000. 8. 3  
 (2000. 9), “ LAN ”,  
 , Vol. 3 No. 30, 2000. 9.14  
 (2001. 10), “e-Book ”,  
 , Vol. 4 No. 18, 2001. 10. 9  
 (2001. 7), “PDA ( 1 )”,  
 , Vol. 4 No. 13, 2001. 7. 26  
 (2001. 8), “PDA ( 2 )”,  
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 (2001. 1), ,

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 e-Book : <http://www.hanmi-c.com>  
 KRNIC( ): [stat.nic.or.kr/public\\_html/](http://stat.nic.or.kr/public_html/)  
 : <http://www.csr.co.kr/>  
 : [www.mpb.go.kr](http://www.mpb.go.kr)  
 : [www.dhpop.com](http://www.dhpop.com),  
 : <http://www.kpa21.or.kr>  
 : <http://dreambook.co.kr>  
 : <http://www.barobook.com>  
 : <http://www.voicebook.co.kr>  
 , : <http://www.wisebook.com/booktopia>  
 : <http://www.eduebooks.com>  
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 : <http://www.everbook.com/eworld/ebookintro.asp>  
 : <http://www.aonepro.co.kr>  
 : <http://www.mcebook.co.kr>  
 : <http://www.copyright.or.kr>  
 : <http://www.kotri.re.kr/>  
 : <http://www.komba.net>  
 : <http://www.sack.or.kr/>  
 : <http://www.riak.or.kr>  
 : <http://www.komca.or.kr/>  
 : <http://www.hiebook.com>  
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<http://www.rapa.or.kr/book/publi/prom/1997/prom-5-2.html>

<http://www.hanaro.com/nonflash/goo/home/catv.html>

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[ 16841 2000. 06. 19.]  
[ 7 50 1999. 08. 02.]  
[ 16725 2000. 02. 28.]  
[ 508 2000. 01. 10.]  
[ 4268 ( ) 1990. 12. 27.]  
[ 449 1997. 07. 19.]  
[ 13 691 1992. 07. 03.]  
[ 1596 7 1998. 12. 31.]  
[ 1672 5 2000. 02. 28.]





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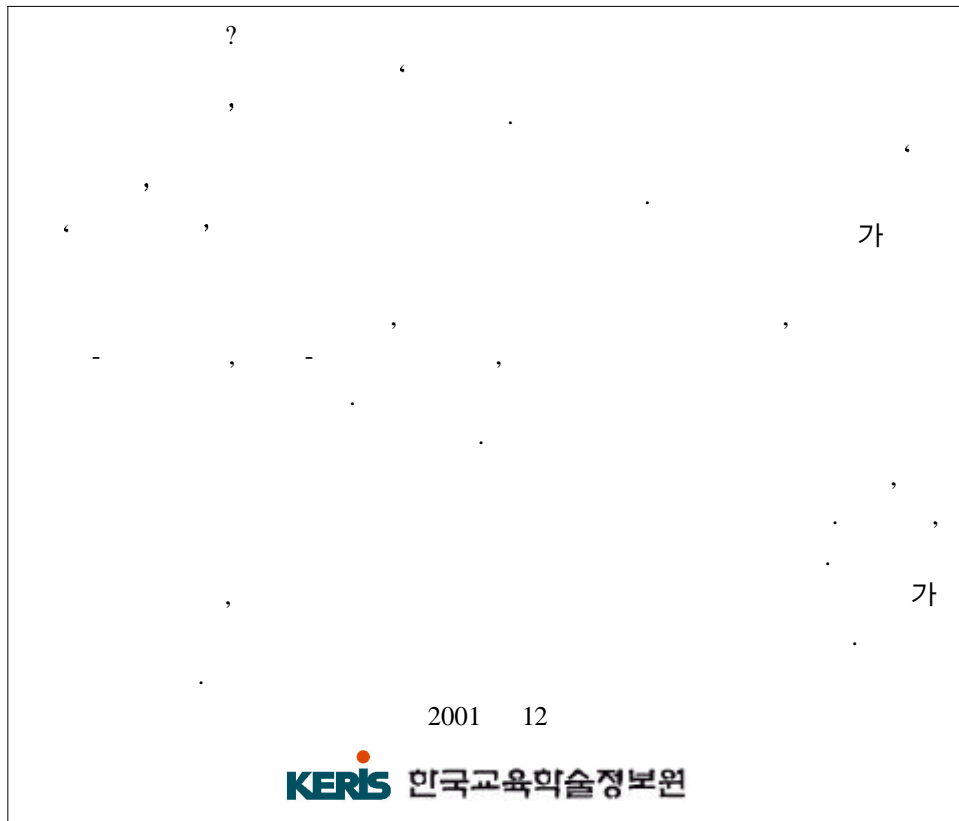
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02-3488-6258, Fax 02-3472-8908

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(2000) 가 , TV, ( , PDA) ( (2000). e-Book [on-line]. available <http://www.everbook.com/eworld/ebookintro.asp>) , “ - , , ” .

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- (1) PC
- (2)
- (3) e-Book
- (4) (PDA)
- (5)
- (6) \_\_\_\_\_

8. (5 )

가  
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- (1) PC
- (2)
- (3) e-Book
- (4) (PDA)
- (5)
- (6) \_\_\_\_\_

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- (2) , e-Book
- (3) CD-ROM,
- (4) (1), (2)가
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- (1)
- (2) , e-Book
- (3) CD-ROM,
- (4) (1), (2)가
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- (7) (1), (2), (3)
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**2.**



1. A : 1. PC( ) +

				( )
H/W			PIII 800MHz CPU, 128MB RAM, 20GB HDD, 17" , NIC	
S/W	OS ( )		Winodws 가	
		ISDN, CATV, ADSL	가	
		LAN	가	
		Wireless LAN		
		Bluetooth		
		( , , )		
	( )	( , , )	PC: :	
		· ( , , )	PC: :	
		( , , )	PC: :	
		( )		
		, ( , , )'		
	H/W			
		(Update)		
			(CD-ROM, , )	
		(Update)		
	H/W, S/W			
			.	
			· · 가(update)	

		Drill and Practice, Tutorial, Simulation, Game, Presentation, Project Base Learning, Cooperative Learning		
		, ,		
	가	, , ,		
		가 , ,		
		(DB) ,		

A .

· · · · · · · · · · ·가 , ,	· · ·, ·H/W ·H/W, S/W ·H/W, S/W · · LAN	·H/W, S/W LAN

2. B : 2. PC( ) +

				( )
H/W			PIII 800MHz CPU, 128MB RAM, 20GB HDD, 17" NIC	
S/W	OS ( )		Winodws 가	
		ISDN, CATV, ADSL		
		LAN		
		Wireless LAN	가	
		Bluetooth	가	
			가	
		( , , )		
	( )	( , , )	PC: :	
		· ( , , )	PC: :	
		( , , )	PC: :	
		( )		
		, ( , , )'		
	H/W			
		(Update)		
			(CD-ROM, , )	
		(Update)		

	H/W, S/W			
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		. . 가(update)		
		Drill and Practice, Tutorial, Simulation, Game, Presentation, Project Base Learning, Cooperative Learning		
		, ,		
	가	, , ,		
		가 , ,		
		(DB) ,		

B .

· · · · · · , , 가 · · ·가 , ,	· · · , · H/W · H/W, S/W · H/W, S/W · · LAN 가	· H/W, S/W LAN

3. C : 3. +

				( )
H/W			RAM : 32MB , Storage : 16MB , LCD : 5.6" , : 320×240 , : NIC	
S/W	OS ( )		WinodwsCE or LINUX 가	
		ISDN, CATV, ADSL		
		LAN		
		Wireless LAN	가	
		Bluetooth	가	
			가	
	( )	( , , )		
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	H/W			
		(Update)		
		(Update)		



	H/W, S/W			
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		Drill and Practice, Tutorial, Simulation, Game, Presentation, Project Base Learning, Cooperative Learning		
		, ,		
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		가 , ,		
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C .

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**3. 7**

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	1-1 1-2	2-1 2-2	3-1 3-2				
	1-1 1-1 1-2 1-2	2-1 2-1 2-2 2-2	3-1 3-1 3-2 3-2	4-1 4-1 4-2 4-2	5 5	6 6	
			3-1 3-2	4-1 4-2 4-2	5-1 5-1 5-2 5-2	6-1 6-1 6-2 6-2	
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	1-1 1-2	2-1 2-2	3-1 3-2	4-1 4-2	5	6	
			3-1 3-2	4-1 4-2	5-1 5-2	6-1 6-2	
	1-가 1-	2-가 2-	3-가 3-	4-가 4-	5-가 5-	6-가 6-	
			3-1 3-2	4-1 4-2	5-1 5-2	6-1 6-2	
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			3	4	5	6	
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	가		
	153,525	3,838,130	- 1 10 , 2 13 - 3 , 9 , 12 , 15
	127,426	3,185,650	- 1 7 , 2 10 - , 6 , 9 , 15
	97,571	2,439,275	- 1 4 , 2 7 - 3 , 6 , 12
	70,963	1,774,080	- 1 , 2 - , , , 9
	65,028	1,625,700	- , 1 4 , 2 7 - , 7
	62,343	1,558,580	- 1 , 2 3 , 5 - 3 , 10
	49,614	1,240,350	- 2 , , - , 5 ,

가 ( ) 가 .

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2001. 2. 8

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	Mbyte	2,543,635	4,290,984	5,717,487
	100	612,465	840,293	1,077,003
	100	1,448,922	2,327,040	3,033,551
	10	2,307,070	2,931,316	4,156,762
	10	556,385	805,158	1,079,621
· ·	1,000	583,374	884,503	1,199,211

1. (Mbyte)

( : )

	617,606	1,042,699	1,390,946
	599,389	1,009,101	1,350,006
	358,771	606,801	808,181
	304,765	513,129	680,871
	210,679	355,616	473,739
	200,504	339,466	450,327
	251,921	424,172	563,417
	2,543,635	4,290,984	5,717,487

2. (100 )

( : )

	96,213	128,215	145,975
	180,076	251,982	302,989
	150,429	224,729	330,335
	71,284	92,870	127,752
	43,721	55,224	76,715
,	39,674	49,279	52,908
	31,068	37,994	40,329
	612,465	840,293	1,077,003

3. (100 )

( : )

	439,828	636,756	912,213
	344,843	907,184	1,139,207
	206,032	250,066	440,253
	144,551	214,076	217,951
	77,981	117,782	119,792
,	75,899	102,523	103,883
	159,788	98,653	100,252
	1,448,922	2,327,040	3,033,551

4. (10 )

( : )

	161,384	208,271	366,348
	748,913	1,335,884	1,791,250
	536,411	621,763	841,178
	268,043	289,135	362,740
	215,381	200,096	336,540
,	173,569	121,150	218,623
	203,369	155,017	240,083
	2,307,070	2,931,316	4,156,762

5. (10 )

( : )

	36,630	78,174	100,293
	141,818	332,530	460,307
	188,498	181,238	237,638
	88,396	88,105	115,196
,	52,002	66,450	88,068
	49,041	58,661	78,119
	556,385	805,158	1,079,621

6. - - (1,000 )

( : )

	90,408	136,735	134,991
	241,270	364,294	650,363
	110,441	165,803	179,001
	69,756	75,705	54,451
,	32,989	55,085	62,100
	38,510	86,881	118,305
	583,374	884,503	1,199,211

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