

Analyses of usage of NSDL resources and the Instructional Architect

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Part 1: Project-based Analysis

- This part is based on the analysis of projects created through the IA, which only analyzed accounts logged in after January, 2003.
- The data was retrieved before October 25, 2004.
- This part only analyzed useful projects, which means the projects that have at least one resource and were created by useful accounts. Useful accounts refer to the registered users except for those who used the IA for testing.
- There are five professional development workshops to date.
Workshop1: November 3, 5 and 7, 2003;
Workshop2: January 26, 2004;
Workshop3: June 22, 2004;
Workshop4: August 13, 2004;
Workshop5: September 14 and 16, 2004.



The distribution of accounts

		Number	Percent
Useful	Non-workshops	46	14
	Workshop 1	32	10
	Workshop 2	14	4
	Workshop 3	13	4
	Workshop 4	23	7
	Workshop 5	18	6
Useless	Testing	17	5
	Blank	159	50
	Guest	1	0
Total		323	100

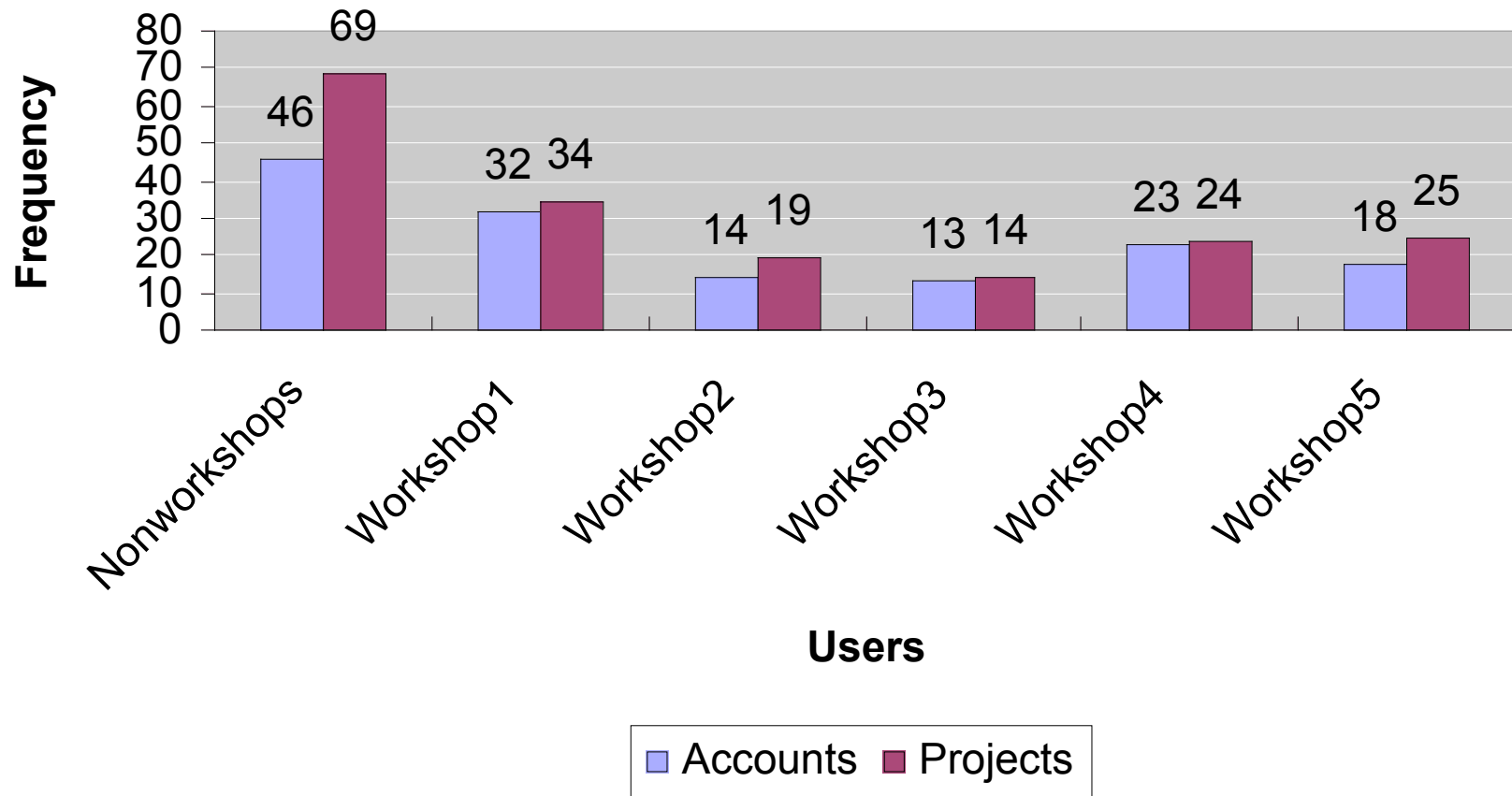


The distribution of useful accounts and useful projects (Table)

	Non-workshops		Workshop 1		Workshop 2		Workshop 3		Workshop 4		Workshop 5		
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	Total
Accounts	46	31.5	32	22	14	9.5	13	9	23	16	18	12	146
Projects	69	37	34	18	19	10	14	8	24	13	25	14	185



The distribution of useful accounts and useful projects (Graph)



Note: The modification interval means the interval between the first time one project was created and the latest time it was modified, which is represented by the number of months.

The modification interval of per useful project created (Table)

	Frequency	Percent	Cumulative Percent
0 month	157	84.9	84.9
1 months	4	2.2	87.0
2 months	1	.5	87.6
4 months	3	1.6	89.2
5 months	10	5.4	94.6
7 months	7	3.8	98.4
8 months	1	.5	98.9
9 months	2	1.1	100.0
Total	185	100.0	

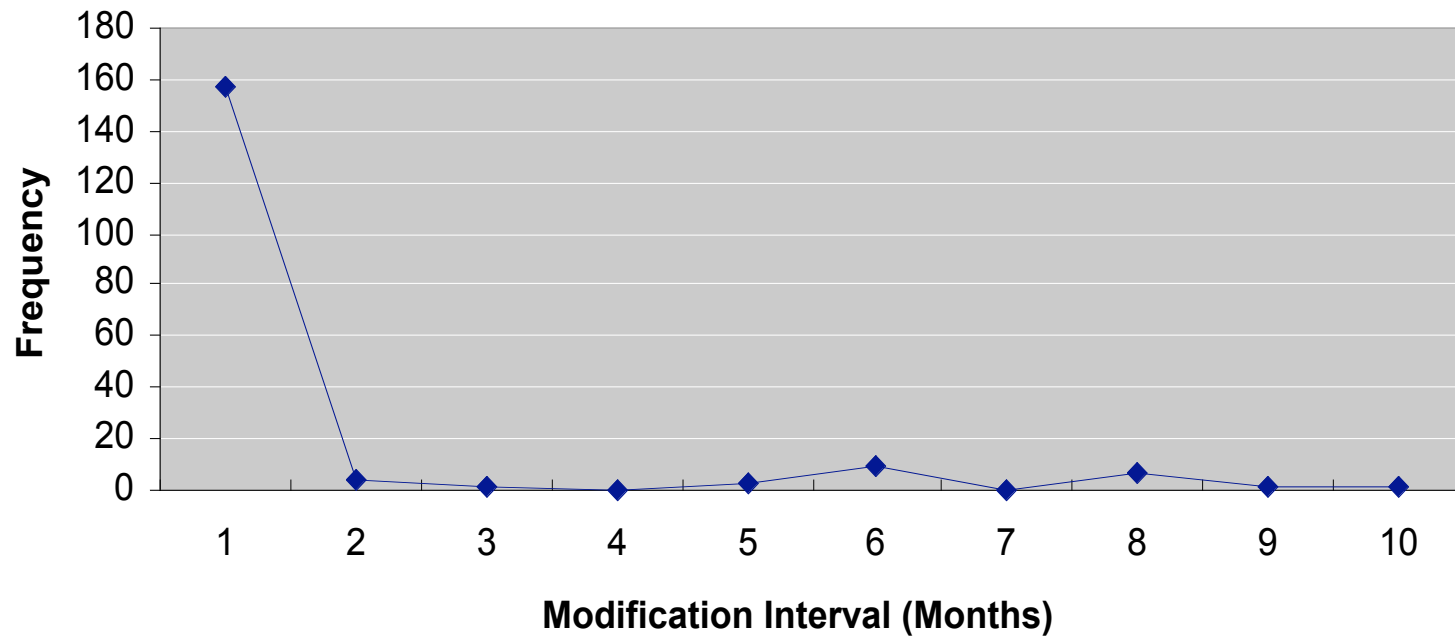
Descriptive Statistics

N	Minimum	Maximum	Mean	Std. Deviation
185	0	9	.77	2.038



Note: The modification interval means the interval between the first time one project was created and the latest time it was modified, which is represented by the number of months.

The modification interval of per useful project created (Table)



The hits on per useful project (Table)

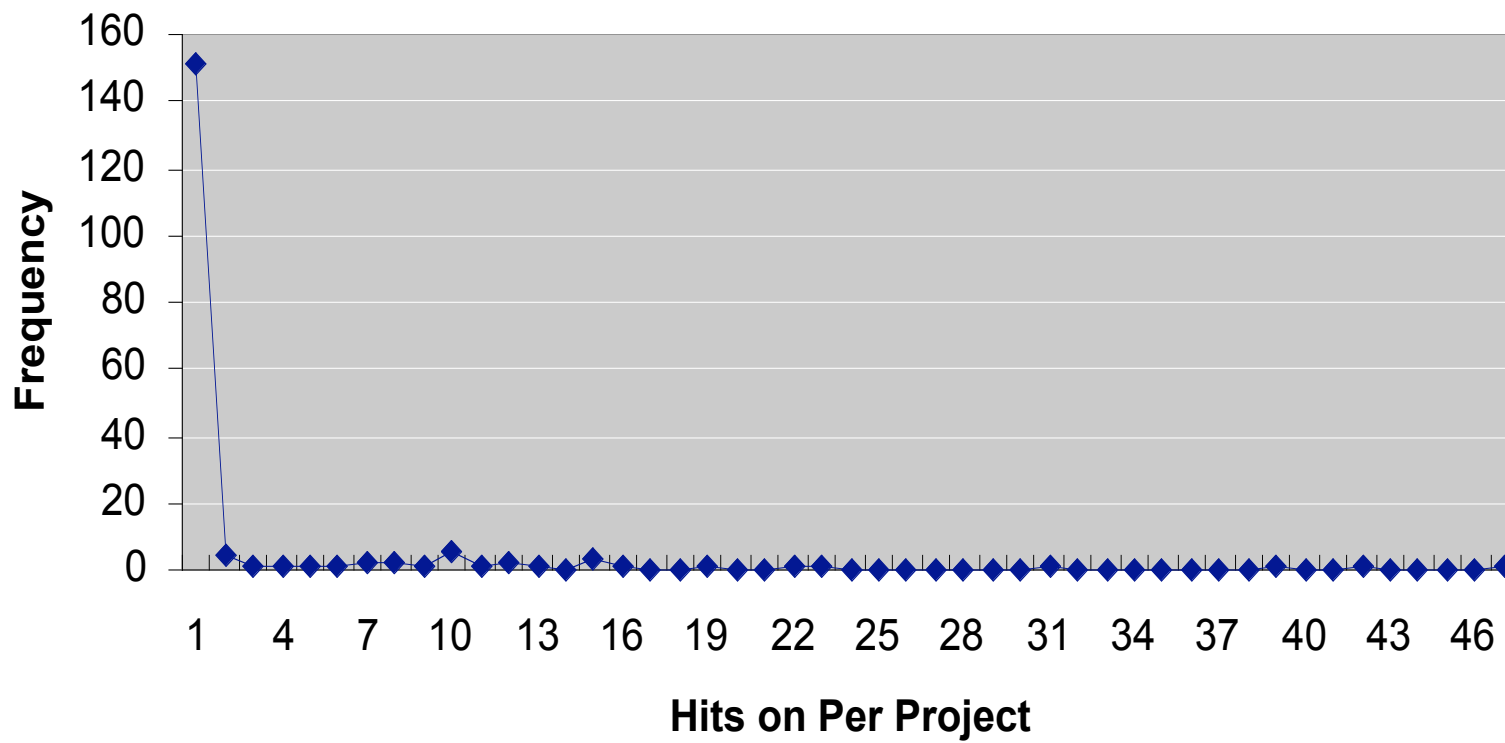
	Frequency	Percent	Cumulative Percent
0	151	81.6	81.6
1	4	2.2	83.8
2	1	.5	84.3
3	1	.5	84.9
4	1	.5	85.4
5	1	.5	85.9
6	2	1.1	87.0
7	2	1.1	88.1
8	1	.5	88.6
9	6	3.2	91.9
10	1	.5	92.4
11	2	1.1	93.5
12	1	.5	94.1
14	3	1.6	95.7
15	1	.5	96.2
18	1	.5	96.8
21	1	.5	97.3
22	1	.5	97.8
30	1	.5	98.4
38	1	.5	98.9
41	1	.5	99.5
46	1	.5	100.0
Total	185	100.0	

Descriptive Statistics

N	Minimum	Maximum	Mean	Std. Deviation
185	0	46	2.29	6.797



The hits on per useful project (Table)



The number of useful projects created by per useful account

	Frequency	Percent	Cumulative Percent
One project	116	79.5	79.5
Two projects	24	16.4	95.9
Three projects	4	2.7	98.6
Four projects	1	.7	99.3
Five projects	1	.7	100.0
Total	146	100.0	

Descriptive Statistics

N	Minimum	Maximum	Mean	Std. Deviation
146	1	5	1.27	.614



The number of resources per useful project (Table)

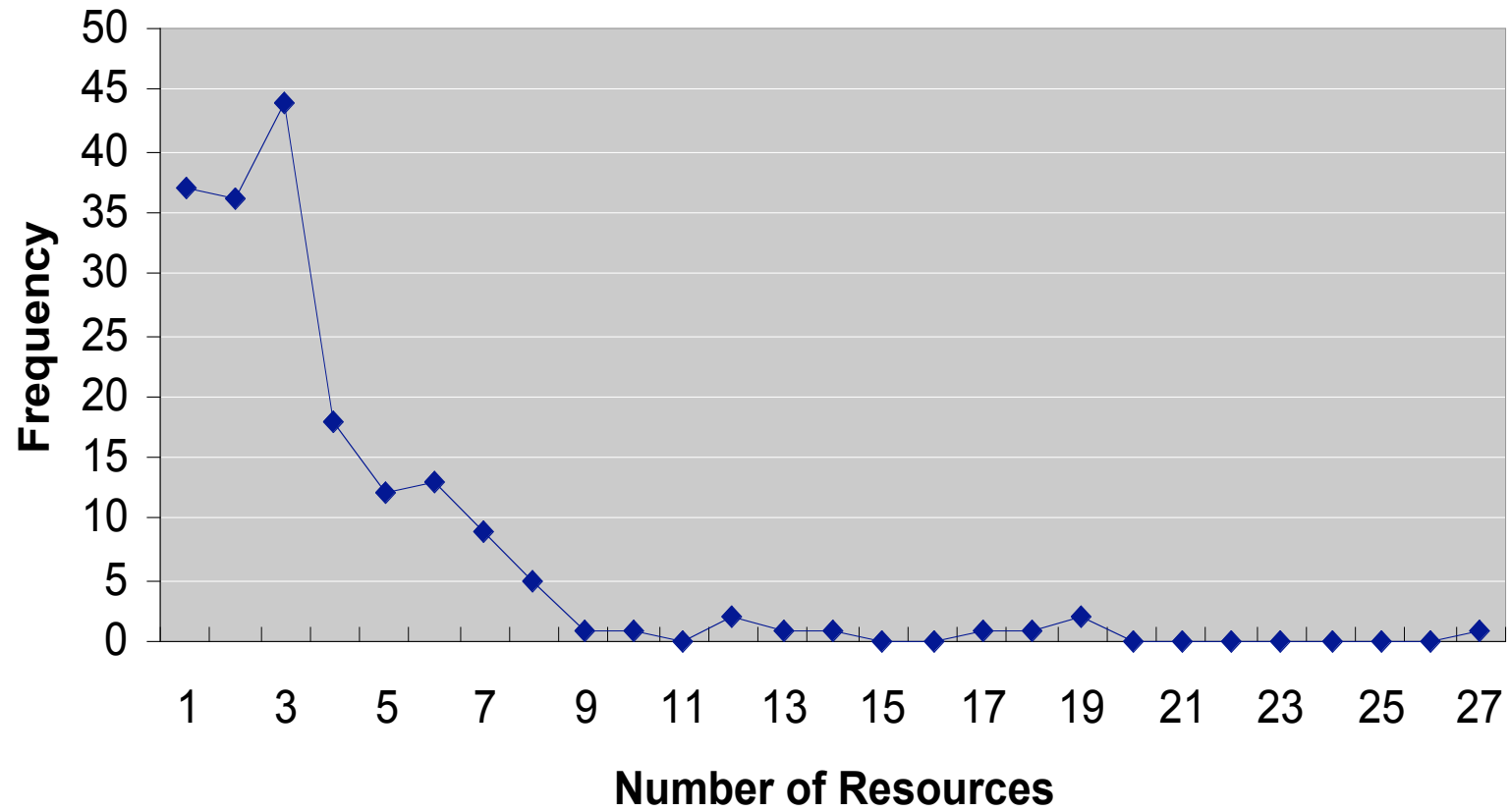
	Frequency	Percent	Cumulative Percent
1 resource	37	20.0	20.0
2	36	19.5	39.5
3	44	23.8	63.2
4	18	9.7	73.0
5	12	6.5	79.5
6	13	7.0	86.5
7	9	4.9	91.4
8	5	2.7	94.1
9	1	.5	94.6
10	1	.5	95.1
12	2	1.1	96.2
13	1	.5	96.8
14	1	.5	97.3
17	1	.5	97.8
18	1	.5	98.4
19	2	1.1	99.5
27	1	.5	100.0
Total	185	100.0	

Descriptive Statistics

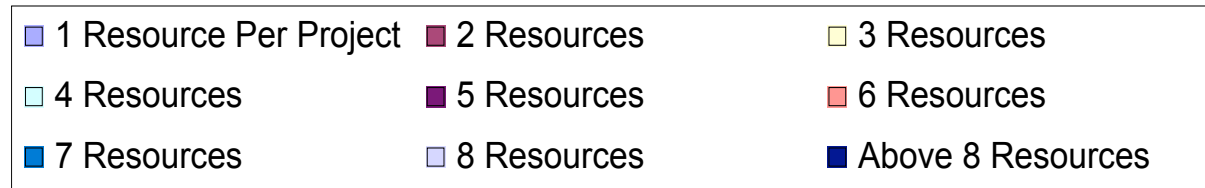
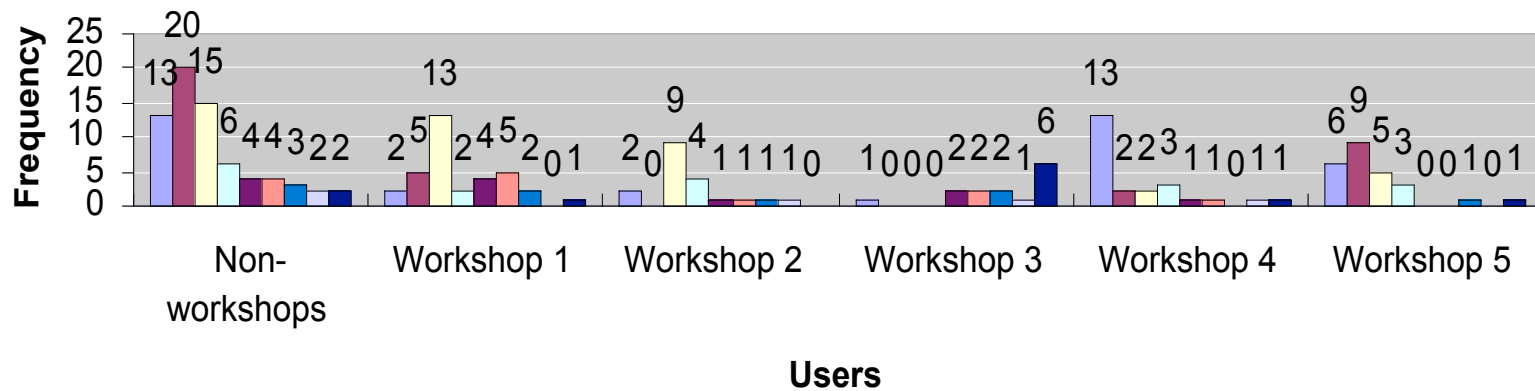
N	Minimum	Maximum	Mean	Std. Deviation
185	1	27	3.91	3.655



The number of resources per useful project (Table)



The number of resources per useful project created by different users



The number of web pages per useful project (Table)

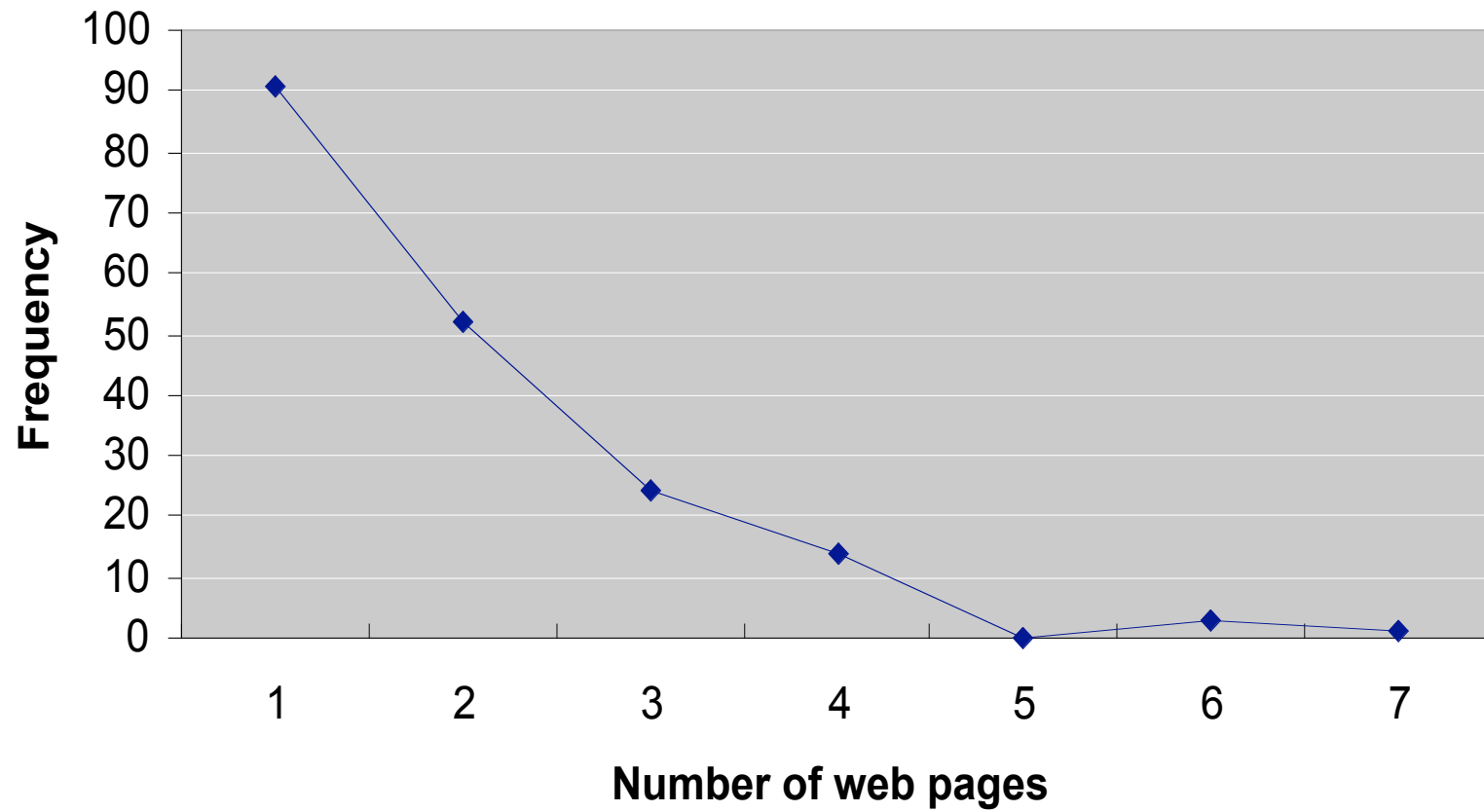
	Frequency	Percent	Cumulative Percent
1 web page	91	49.2	49.2
2 web pages	52	28.1	77.3
3 web pages	24	13.0	90.3
4 web pages	14	7.6	97.8
6 web pages	3	1.6	99.5
7 web pages	1	.5	100.0
Total	185	100.0	

Descriptive Statistics

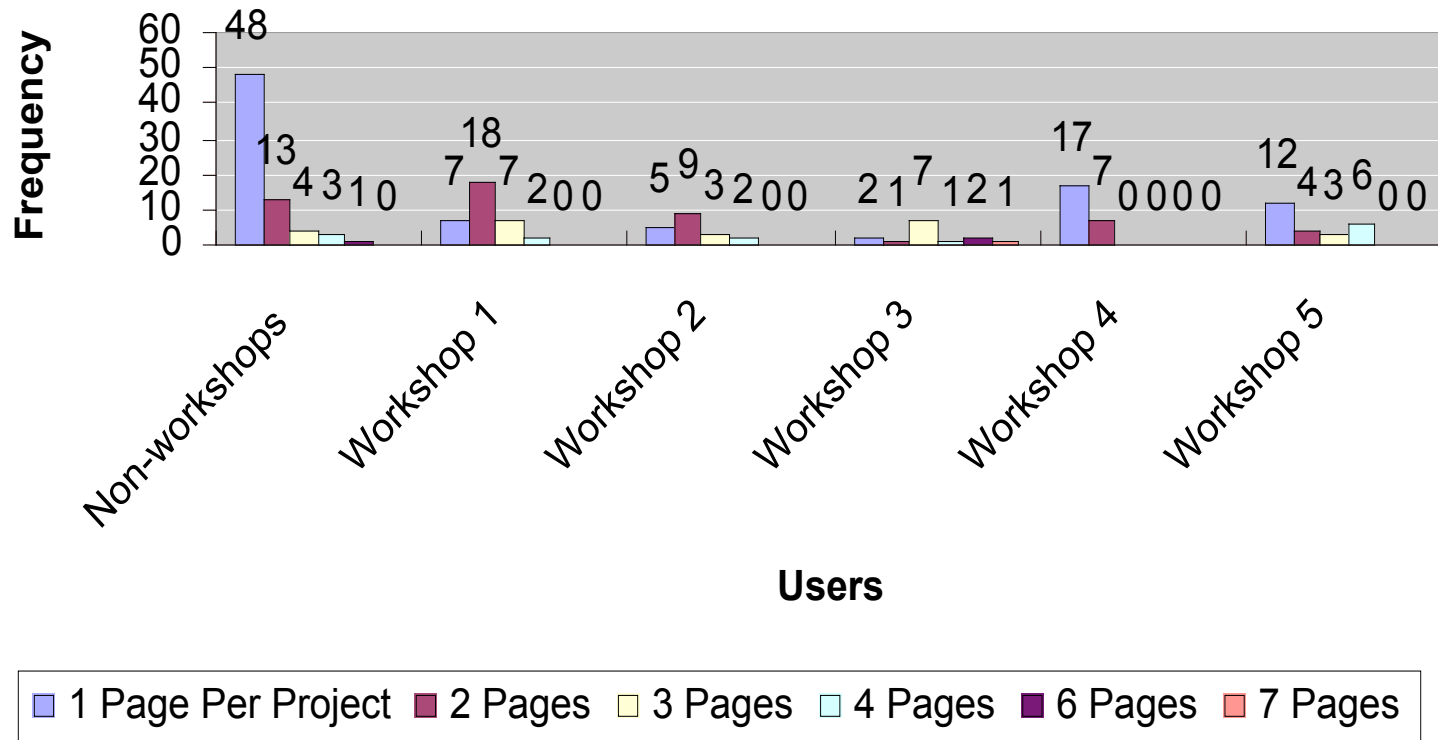
N	Minimum	Maximum	Mean	Std. Deviation
185	1	7	1.88	1.145



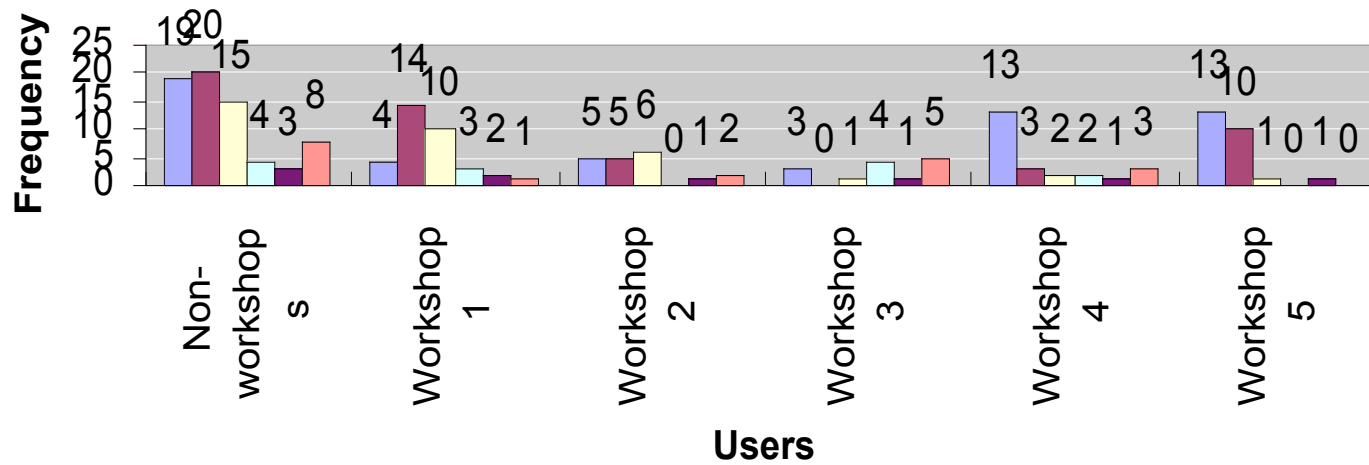
The number of web pages per useful project (Table)



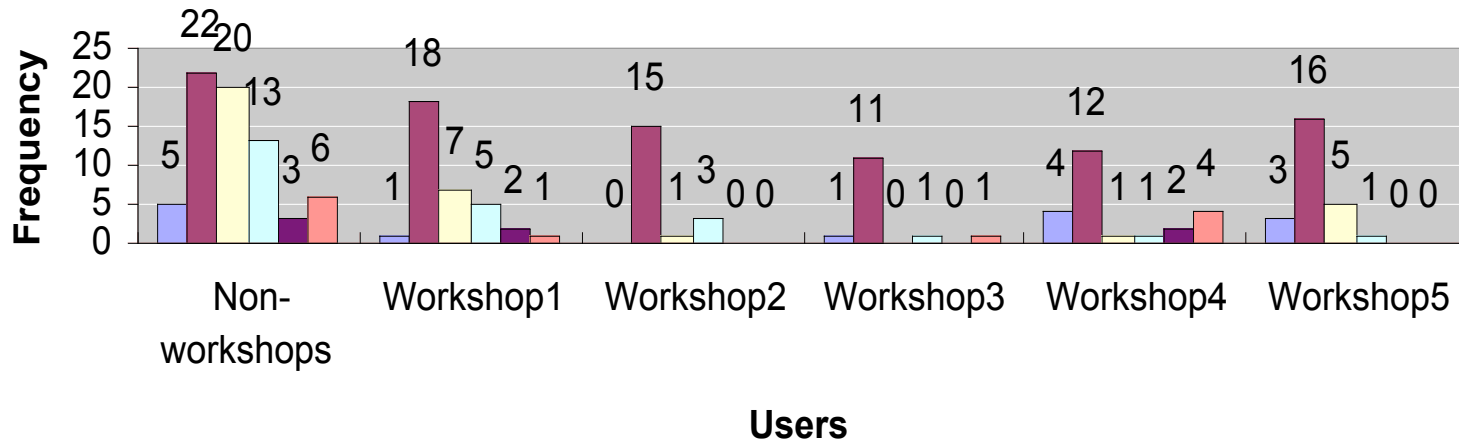
The number of web pages per useful project created by different users



The number of maximum resources per web page in each project created by different users



The number of minimum resources per web page in each project created by different users

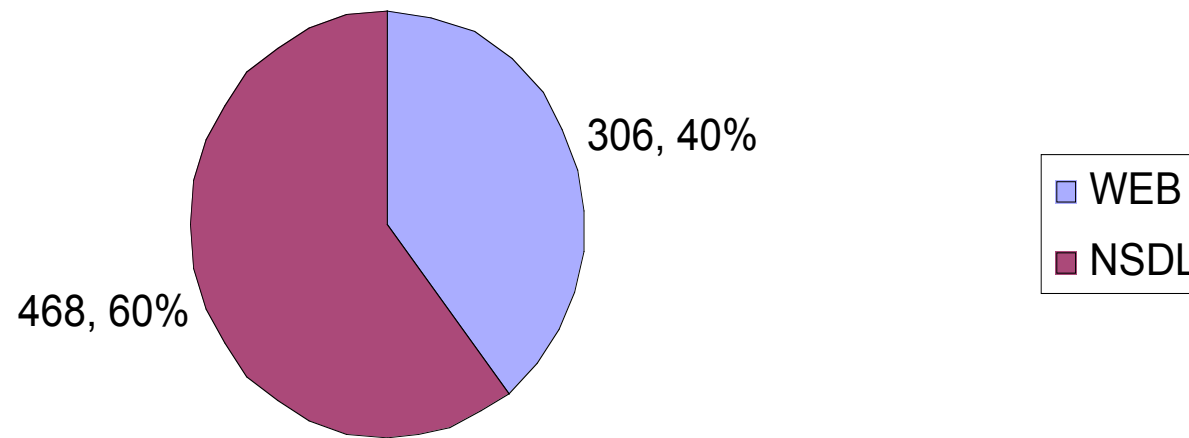


Part 2: Resource-based Analysis

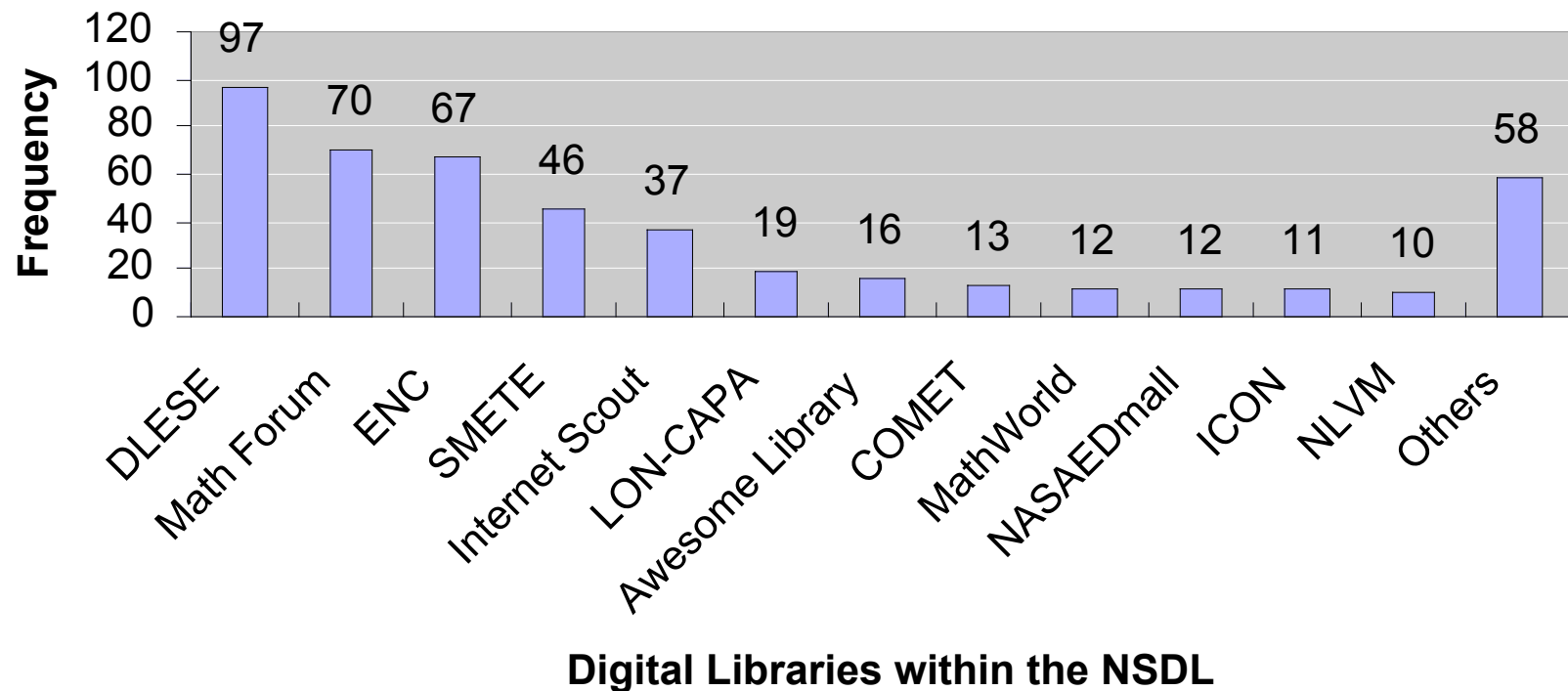
- This part is based on the analysis of resources used in every project created through the IA, which only analyzed accounts logged in after January, 2003.
- The data was retrieved before November 1, 2004.
- The database began to record the metadata regarding resources after May 2004, so “before recorded” here refers to resources used before May 2004.
- There are five workshops to date.
Workshop1: November 3, 5 and 7, 2003;
Workshop2: January 26, 2004;
Workshop3: June 22, 2004;
Workshop4: August 13, 2004;
Workshop5: September 14 and 16, 2004.



The distribution of the sources of resources searched through the IA



The distribution of resources searched from different digital libraries within the NSDL



The distribution of resources searched from different sources

	Frequency	Percent
WEB	306	39.5
DLESE	97	12.5
Math Forum	70	9.0
ENC	67	8.7
SMETE	46	5.9
Internet Scout	37	4.8
LON-CAPA	19	2.5
Awesome Library	16	2.1
COMET	13	1.7
Mathworld	12	1.6
NASAEDmall	12	1.6
ICON	11	1.4
NLVM	10	1.3
Others	58	7.4
Total	774	100.0



Metadata for subject and grade level for discovered resources

	Frequency	Percent	Cumulative Percent
No subject and grade info	596	77.0	77.0
Subject info only	120	15.5	92.5
Grade info only	18	2.3	94.8
Subject and grade info both	40	5.2	100.0
Total	774	100.0	

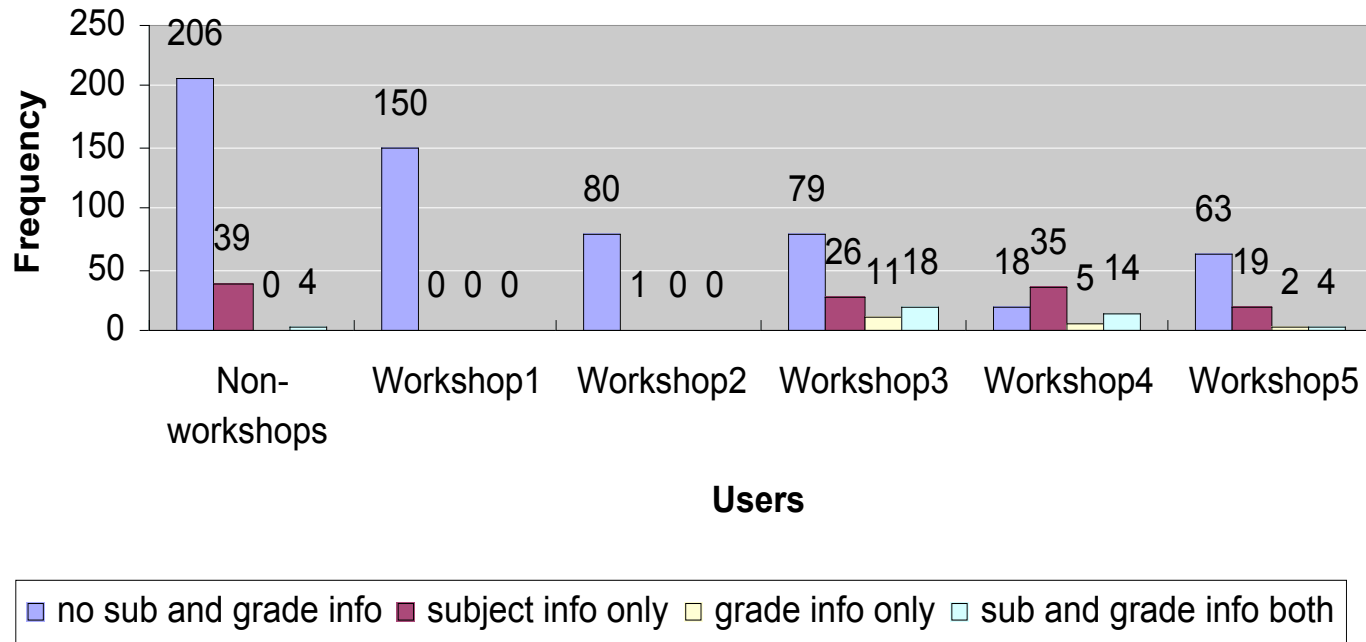


The distribution of the metadata for subject and grade level for discovered resources

	Information of Subject and Grade Level				Total
	No subject and grade info	Grade info only	Subject info only	Subject and grade info both	
WEB	306	0	0	0	306
Internet Scout	22	0	15	0	37
ENC	29	0	38	0	67
Math Forum	41	0	29	0	70
DLESE	47	15	0	35	97
Awesome Library	9	0	7	0	16
Others	142	3	31	5	181
Total	596	18	120	40	774



Metadata for subject and grade level for discovered resources for different users



Note: The format of resources come from analyzing the metadata automatically generated by digital libraries. For example, if the metadata shows the resource is a link, the format is “url”. “Other” here means the format other than the format “url”, “webgraphic” and “applet”.

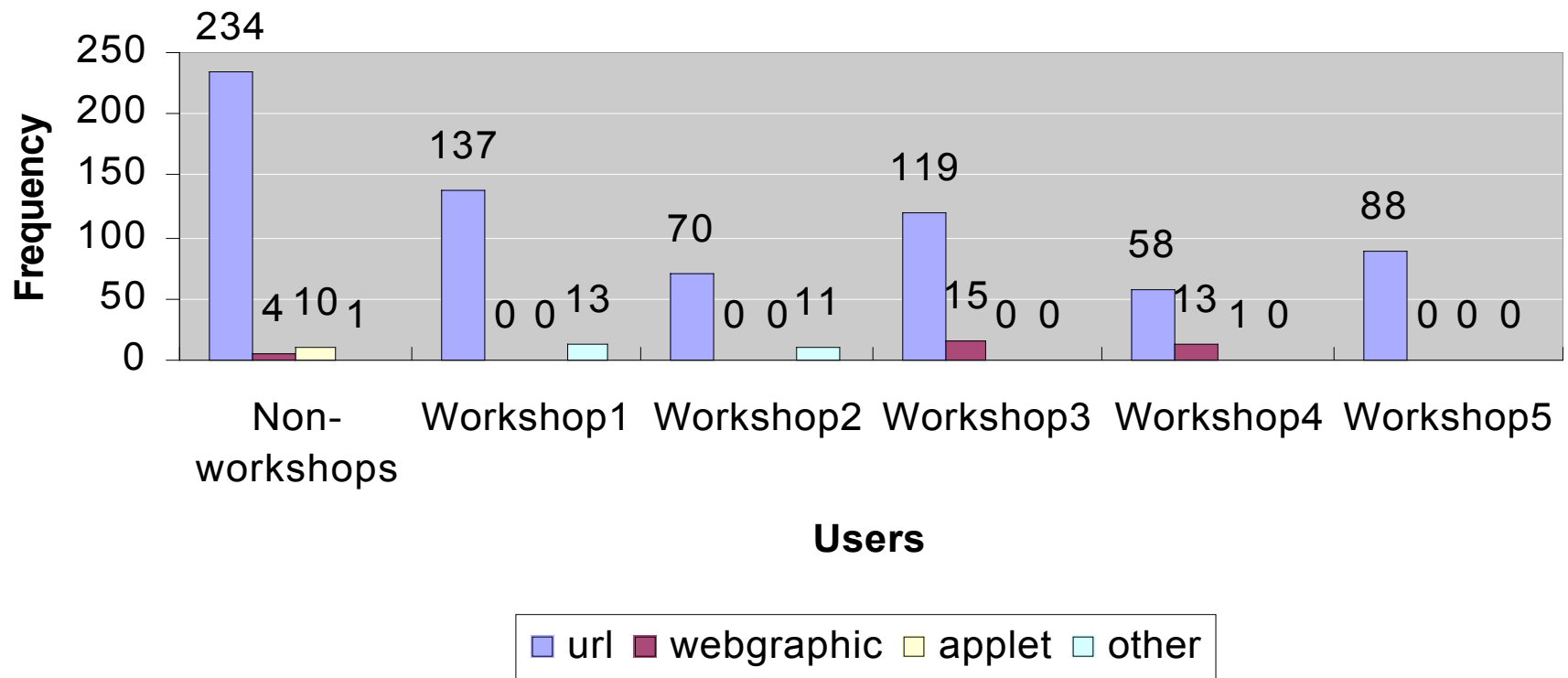
Resource format metadata

	Frequency	Percent
url	706	91.2
webgraphic	32	4.1
other	25	3.2
applet	11	1.4
Total	774	100.0



Note: The formats of resources come from analyzing the metadata provided by digital libraries. For example, if the metadata shows the resource is a link, the format is “url”. “Other” here means the format other than the format “url”, “webgraphic” and “applet”.

The format metadata for resources discovered by different users



Note: The database cannot track the keywords used while searching resources from the Web, analysis includes only the resources discovered from the NSDL.

The number of keywords per resource

Number of keywords	Frequency	Percent
One keyword	156	33.3
Two keywords	29	6.2
Three keywords	7	1.5
Before recorded (resources from the NSDL)	276	59.0
Total	468	100



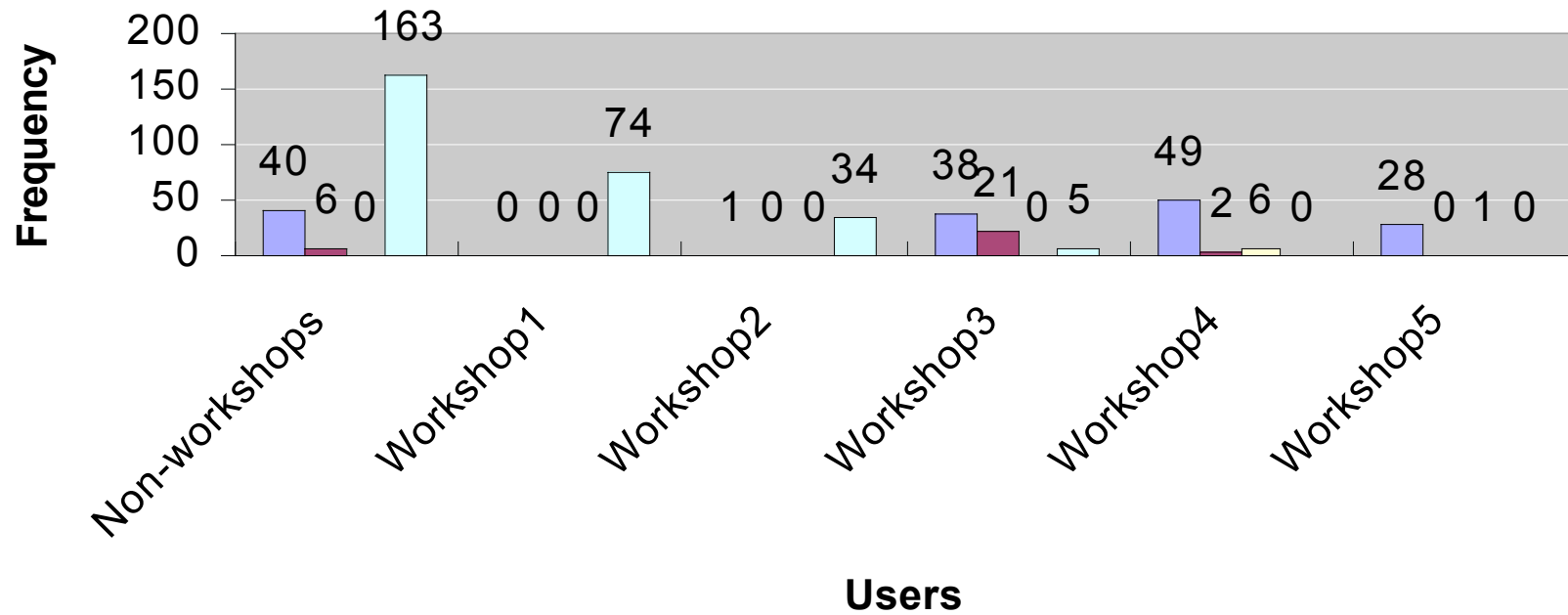
The definition of the number of keywords per resource

Note: Here, the number of keywords is determined by the number of terms rather than that of words, which is shown by the below table.

Number of keywords	Explanation	Example
One keyword	With only one word	“fraction(s)”, “moon”, “graphing”,
	With couple of words that have close connection to consist one term	“place value”, “water cycle”, “shield volcano”, “rock identification”, “sexually transmitted diseases infections”,
Two keywords	With “and” or “,” to connect two words	“rocks and minerals”, “cell, mitosis”,
	With two words or terms addressing different aspects of meanings	“water resources Utah”, “real life math for third grade”,
Three keywords	With three words or terms addressing different aspects of meanings	“fraction decimal percent”, “soil and climate university of Illinois extension”



The number of keywords per resource discovered by different users



Note: The database cannot track the keywords used while searching resources from the Web, analysis includes only the resources discovered from the NSDL.

The feature of keywords per resource

Feature of keywords		Frequency	Percent
General (same or mostly similar to the project topic)		120	25.6
Specific (sub-topic of the project topic)		69	14.7
Cannot tell	Before recorded (resources from the NSDL)	276	59.0
	Not relative	3	0.7
Total		468	100



The definition of the feature of keywords per resource

Note: Here, the feature of keywords is determined by their relationships with the project topics, which is shown by the below table.

Feature of keywords	Example	
	Name of keywords	Topic of projects
General (same or mostly similar to the project topic)	Moon	The moon
	Fraction(s)	Fractions are fun/Fractions fun
	Place value	Place value practice/Primary grade place value
Specific (sub-topic of the project topic)	Shield volcano	Volcano
	Spiders	Arachnids
	Bike safety, Dole 5 a day, Mental health and teens, ...	Health education



The feature of keywords per resource used by different users

