

NSDL USER SURVEY, 2006

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1 Introduction

A series of surveys of NSDL users carried out by CI in 2006 asked respondents to rate the impact of NSDL on a range of their educational and research practices. 167 responses were collected from three separate sources. The first source was the NSDL contacts survey, conducted online using SurveyMonkey in August 2006. Respondents were chosen from a database of email addresses collected at NSDL outreach activities over the previous years. Respondents were told that 3 individuals chosen at random would receive a \$50 amazon.com gift certificate. 771 emails were sent out, 152 emails bounced, and 7 unsubscribe requests were received, suggesting that 612 survey requests were ‘delivered.’ A total of 125 online responses were received, a response rate of 20.4%. The second source was a paper survey (Appendix B) that had been collected at NSDL outreach and booth activities during 2006. A total of 30 paper responses were collected, making an overall total of 155 survey responses received. The third source was an email list for science teachers in Colorado, which was sent out in September 2006. Respondents were again told that 3 individuals chosen at random would receive a \$50 amazon.com gift certificate. 12 responses were received. The total number of responses received by the beginning of October 2006 was 167.

The survey responses were very positive. After having used NSDL, 80% - 90% of survey respondents were either likely or very likely to tell a colleague about NSDL, use NSDL resources in their teaching, to direct their students to NSDL, incorporate new ideas into their teaching and research, and so on. Respondents praised the easy access, convenience, usability, and trusted and varied content of NSDL, reporting that NSDL provided access to a wide range of interactive resources that supported student comprehension and engagement. At the same time, respondents noted difficulties with refining their searches by topic or age level, navigating the site, and with using NSDL on older computers or on school networks with firewalls.

2 Primary educational role

Respondents identified their educational roles as follows. Respondents could select more than one educational role. Note that given differences in the definition of primary, secondary and tertiary education in different parts of the United States, this breakdown in this table is only approximate:

	Tertiary (postsecondary, TA, researcher, post-doc)	Secondary (high school, middle school)	Primary (elementary)	Other (curriculum developer, other)
NSDL contacts (n=125)	16.0%	31.3%	16.7%	36.0%
Booth survey (n=30)	15.25%	70.0%	6.1%	9.1%
CO science list (n=12)	23.5%	35.3%	11.8%	29.4%

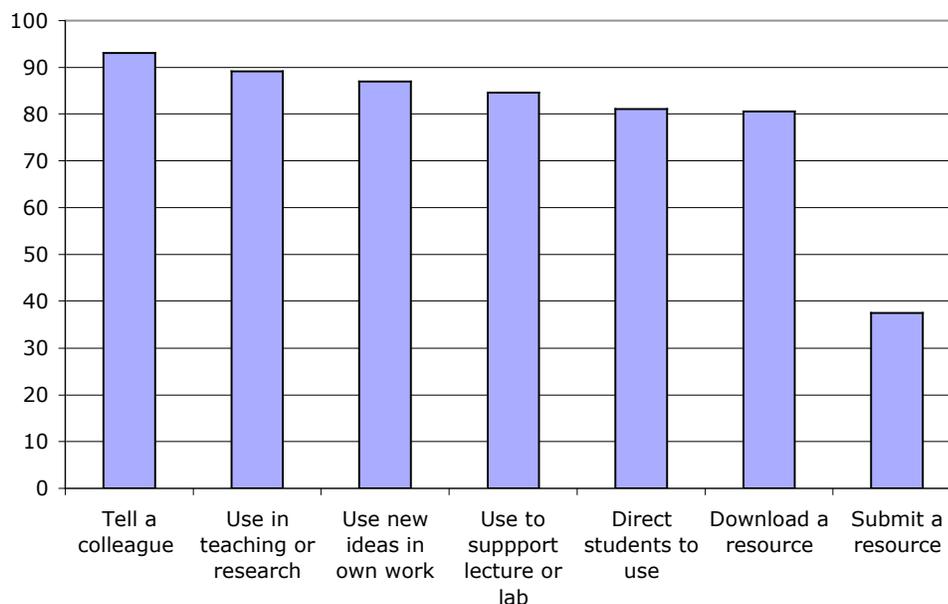
Responses in the ‘Other’ category included ‘curriculum developer’ (17 responses), ‘librarian’ (12 responses), educational technologist (8 replies), consultant (5 responses), outreach (3 responses), as well as a range of people involved in various departments and educational programmes. A full list of responses given in the ‘Other’ category is given on the following page. Note that some respondents specified more than one primary educational role.

Survey responses for 'Other':

- Dept Chair
- Master teacher for the X project at Y
- e-Learning
- Consultant--In service in schools
- Director of Public Programs
- Librarian
- Teach anthropology and museum studies courses and conduct archaeological research
- Direct a university center for environmental education
- I am also a PhD student in science education
- Four year college teacher
- Librarian
- Mathematics Education Consultant
- Professional Development consultant
- Technology resource teacher
- I am an instructional technologist that supports higher and public education in X state
- Director of outreach - Regional Educational Technology Center/X University
- I work at a private university as a Reference Librarian
- My primary role is in the library as an Information Resource Officer
- Central Office support staff for Library Media Specialists
- High school library media specialist
- Asst. Director Academic Technology, University Level
- High School Assistant Principal
- Ph.D. working as an adjunct
- Outreach specialist non-profit
- Outreach and professional development statewide
- Science Education Specialist - provide professional development to K-12 science teachers
- Middle school library media specialist
- Reference Librarian
- Librarian
- District level administrator--Director of Instructional Support
- Librarian
- Learning Consultant for local school, science consultant for the X school district
- Teacher/counselor 7-12 Opportunity and Enrichment School
- Govt. educator
- Nonformal educator: environmental science teacher at a research center
- X state Dept of Education, Director of Ed Tech
- Env ed program coordinator
- Doctoral Student and Research Assistant
- instructional technology specialist
- Middle School Media Specialist
- Middle School Librarian
- Public Library Director
- Education Associate with the State Department of Education
- Technology research teacher
- Technology consultant for staff development and curriculum/tech. Integration; Project X coordinator for NYC
- School District Science Supervisor
- Retired. Helping association members use the Digital Lib.
- I run an environmental service learning program for K-8.

3 Impact of NSDL on users' STEM educational and research practices

Having used NSDL, how likely/very likely are you to ...:



Having used NSDL, how likely are you to ...:	Likely	Very likely	Likely/very likely
Tell a colleague about NSDL	27.6	65.5	93.1
Use NSDL resources in my teaching and research	25.4	63.8	89.1
Incorporate new ideas/thinking in teaching/research	37.0	50.0	87.0
Use NSDL resources for lecture or lab enhancement	27.6	56.9	84.6
Direct students to use NSDL resources	27.6	53.5	81.1
Download an NSDL resource	28.1	52.5	80.6
Submit a resource I used in teaching to NSDL	21.1	16.4	37.5
Make no further use of NSDL	4.0	4.0	7.9

NOTE: 'N/A' responses, which varied from question to question, were not included in these totals

Respondents were asked, on a scale of 1 (not likely) to 5 (very likely), the extent to which a range of their educational and work practices had been impacted after using NSDL. Responses to these questions were highly positive, with 80% to over 90% of respondents replying that they would be 'likely' or 'very likely' to tell colleagues or students about NSDL, to use NSDL in lectures and labs, to use NSDL to incorporate new ideas in their teaching and research (and thus to assist their own professional development), and to download NSDL resources.

These responses suggest that use of NSDL is having a very positive impact on the practices of STEM educators, in terms of teaching practices, in terms of relationships with colleagues, and in terms of professional development.

4 Positive and negative comments

The survey asked users for positive and negative comments regarding using NSDL. The ‘good news’ here is that many users emphasised the large amounts of high quality resources to be found in NSDL, suggesting that NSDL’s collection building efforts have resulted in the creation of a rich and diverse collection of exemplary STEM educational resources, appropriate to all educational levels. The ‘bad news’ is that some users found this vast content confusing and difficult to navigate and to make sense of, suggesting that improvements still need to be made in areas such as metadata and search and retrieval, and in site navigation.

4.1 Positive comments

A full list of all comments sorted by educational audience (i.e. tertiary, secondary, primary and ‘other’) is provided in Appendix A. Some themes that emerged from these comments include:

NSDL is an accessible, convenient, single package for educators:

- “These are on-line resources, easily accessible any time and place.”
- “It is a package - everything is there from background information for the teacher to activities for the students.”
- “It is easy to use and saves me time - I don’t have to do searches of other sites and decide if the material I find at these sites is appropriate for classroom use.”
- “NSDL resources are easy to access when you need new ideas.”

NSDL has a wide variety and diversity of up-to-date and current educational resources:

- “[There is] huge variety of materials. I feel like I can find any approach to any topic within the website!”
- “The convenience of the diversity of topics, all in one space! I’ve spent hours ‘surfing’ to find many other items.”
- “A very wide selection of resources all in one place. Easy to find information, current information, and relevant ... I have found it a valuable resource for putting my curriculum together.”
- “Every time I log on I discover a new resource to enrich my students with.”

NSDL is a quality, trustworthy site:

- “I trust the content and source because of where it is coming from, and the high-quality sites it lists.”
- “The REAL science resources - nothing dumbed down.”
- “In my job as a librarian, I need to access quality materials both for students and for teachers. NSDL helps me do both. I have also recommended NSDL to former students who are now in college looking for quality resources.”

NSDL is an easy-to-use, easy-to-search, user-friendly, and easy-to-navigate site:

- “The organization and structure make it very easy to access the information that I am looking for, in specific content areas!”
- “[The] search process provides many resources around a topic. Most seem to be designed with good instructional practices.”
- “Very easy to navigate resources are separated based on the audience (K-12 teachers...) - the search engine is excellent, I had very relevant hits for all my searches.”

NSDL contains interactive, stimulating, engaging resources:

- “NSDL offers teachers resources and teaching strategies to improve student learning and motivation. As a library media specialist resource there is much to recommend to teachers.”

- “The resources that are interactive cause the students to focus on the topic.”
- “Some material is more complicated. However, it is good for critical thinking for our students. It also provides real life situations of the concepts of science used daily vs. the student only seeing the concepts in a textbook.”

4.2 Negative comments

Respondents submitted a smaller number of negative comments, which focused on the difficulties with narrowing down searches to specific topics and audience levels, and problems encountered with using NSDL on older computers, on school networks with firewalls, and so on. One comment (from the respondent with the lowest rating) outlined frustrations encountered with registration sites.

NSDL search and usability could be improved:

- “When you finally get to the ‘end’ of the database you have to read through everything to find what you want. Ex. if I am looking for something specifically on jellyfish/cnidarians in the middle school life science animals section I have to read through entries’ titles vs. topics to help me get to it quickly.
- “Sometimes the amount of information is overwhelming. If you don’t know exactly what you are looking for, it can be very time-consuming to find something to use.”
- “Navigation is not intuitive. It needs to be easier if you hope that students will use it, actually, even if you want teachers to use it it should be easier.”
- “Search function is not quite focused enough.”
- “It seems hard to narrow the search by resource type and grade level.”

NSDL does not work so well on older computers, behind school firewalls, etc.:

- “Well, my modem on my home system has a slow download on some items. It sometimes makes me stay later at work to use their faster system.”
- “I can’t access it when I want due to computer limitations.”
- “[You] must be online to access; [it is] difficult to share with students in a limited computer classroom.”
- “Slow computer connections, expensive to copy classroom sets of information for readings.”

Registration is a barrier:

- “I only spent about an hour on the web site, however, I was very frustrated. It seemed like everything I clicked into required my e-mail address again, there was a cost, or I needed to download software which we are not able to do at school because of filters on our computers. I did not feel like I got anything out of it for the time spent. My frustration level was high and it may discourage me from looking into it further.”

5 Summary

The survey results paint a very positive portrait of the impact NSDL has on the practices of its users. Respondents praised the easy access, convenience, usability, and trusted and varied content of NSDL, reporting that NSDL provided access to a wide range of interactive resources that supported student comprehension and engagement.

At the same time, a number of respondents pointed out that they had had difficulties with refining their searches by topic or age level, navigating the nsdl.org site, and with using NSDL on older computers or on school networks with firewalls.

APPENDIX A: POSITIVE AND NEGATIVE SURVEY COMMENTS, BY AUDIENCE

Note: Given differences in the definition of primary, secondary and tertiary education in different parts of the United States, the audience breakdown in this table is only approximate.

Audience	Positive comments	Negative comments
Tertiary	The information is in one place and easy to access and use.	Not all areas of science education have been researched.
Tertiary	The search function works very well.	There was surprisingly little in my area or social sciences generally when I looked at the University Faculty. I looked at the K-12 Teachers and searched 'archaeology' and found vastly more, much of it that I'd find useful in University level classes. Maybe the categories under Resources set up false distinctions.
Tertiary	The convenience of the diversity of topics, all in one space! I've spent hours 'surfing' to find many other items.	Well, my modem on my home system has a slow download on some items. It sometimes makes me stay later at work to use their faster system.
Tertiary	I have just started using NSDL, so I am not in the position to answer this question. I only learned about it at the NCTM conference near the end of last spring semester.	I have just started using it, so I am not in the position to answer this question.
Tertiary	Access timely	slow computer connections expensive to copy classroom sets of information for readings, etc.
Tertiary	Very easy to navigate resources are separated based on the audience (k-12 teachers...) the search engine is excellent, I had very relevant hits for all my searches.	Nothing really I was satisfied every time I went to the website.
Tertiary	accessibility of information - ease of locating resources.	None.
Tertiary	Availability of lecture and lab resources.	Too much dependence on the on-line resources as against conventional material.
Tertiary	These are on-line resources easily accessible anytime and place.	
Tertiary	NSDL resources are easy to access when you need new ideas. It is much easier to keep up-to-date on the latest teaching techniques.	Sometimes the amount of information is overwhelming. If you don't know exactly what you are looking for, it can be very time-consuming to find something to use.
Tertiary	The sharing of knowledge.	
Tertiary	Visual representation of scientific concepts.	
Tertiary	The abundance of resources for teaching secondary math.	Some students had trouble navigating the site.
Tertiary	Excellent first stop for research.	Could always use more!
Tertiary	Covers all science areas. Easy to use.	Not really a dislike or disadvantage, but it is a work in progress. Example: tree of life.
Tertiary	ComPADRE organization. Peer review of resources.	Seldom comes up under Google.
Tertiary	24/7 availability	Too much info at one time.
Tertiary	Diversity of resources.	Difficult to navigate. No clear pattern of organization.

		There are so many resources, sometime I get lost in the threads that I am following! This is not a bad thing though!
Secondary	Organization of the site and the search engine.	
Secondary	Current, engaging	Can't access it when I want due to computer limitations
Secondary	Update myself in teaching strategies and techniques.	
Secondary	Some material is easy to access and seem to be current.	Its hard to download or manipulate
Secondary	It allows me to find current images that I know are accurate. It is easy to use and saves me time - I don't have to do searches of other sites and decide if the material I find at these sites is appropriate for classroom use.	I consider NSDL to be a curricular resource rather than a curriculum. It is an important tool, but not the entire curriculum.
Secondary	I like the wide selection of resources I can usually find something that meets my needs	I would like a High School area like the middle school area.
Secondary	The easy search options.	none.
Secondary	organization and varitey or 'real' resources.	convincing teacher to use it
Secondary	User Friendly!	None
Secondary	Access to a variety of resources from a single starting point	I haven't used it enough to say
Secondary	Current information my students can use.	It's a bit slow sometimes.
Secondary	have not used it	
Secondary	The organization and structure make it very easy to access the information that I am looking for, in specific content areas!	Nothing yet....just need more resources
Secondary	haven't used it	haven't used it
Secondary	A very wide selection of resources all in one place. Easy to find information, current information, and relevant. I only used it briefly after NSTA last spring. However, I am in the classroom again this year and teaching a new course, cellular and molecular biology. So far, I have found it a valuable resource for putting my curriculum together.	Maybe too many choices. But I think this is the wave of the future. Too many is better than not enough.
Secondary	useful information, user friendly and keeps things current.	na
Secondary	easy to navigate	
Secondary	Up-to-date information!	Learning curve and time investment for assembling lesson ideas/resources
Secondary	I like the many sites you have on a variety of subjects.	Some material is more complicated. However, it is good for critical thinking for our students. I also provides real life situations of the concepts of science used daily vs. the student only seeing the concepts in a textbook.
Secondary	Variety of links	
Secondary	variety of graphic and video resources and searchability by topic.	Search function is not quite focused enough.
Secondary	lots of resources that I can access I trust the content and source because of where it is	It might help to have some better graphics - maybe jazz it up a bit - that would help the

	coming from, and the high-quality sites it lists	students to search without getting bored.
Secondary	Given a topic, I can easily find a variety of supplementary material.	I'd like to see more cross-curricular connections.
Secondary	It is far more current and relevant.	
Secondary	variety of content resources	Lack of depth, not enough resources for the topics I am looking for.
Secondary	Through NSDL I have found interesting idea's on ways to enhance my lessons	I have a need to filter through many things that wont work with my students. In short, often to many suggestions above my students (inner city middle schoolers).
Secondary	It is a package - everything is there from background information for the teacher to activities for the students	When you finally get to the 'end' of the database you have to read through everything to find what you want. Ex. if I am looking for something specifically on jellyfish/cnidarians in the middle school life science animals section I have to read through entries' titles vs. topics to help me get to it quickly.
Secondary	The resources that are interactive cause the students to focus on the topic.	It takes a lot of time to review all the resources available. Can you make the day longer? ;)
Secondary	It is easy to navigate and has a large source of information.	
Secondary	The quality and the fact that it is well-researched.	NA
Secondary	The huge variety of materials. I feel like I can find any approach to any topic within the website!	Sometimes it is difficult to look through everything. There is just soooo much!
Secondary	Everytime I log on I discover a new resource to enrich my students with.	the biggest drawback would be that it can be difficult to find specific curriculum.
Secondary	Easy to use and incorporate into the curriculum.	
Secondary	It's free. Provides resources at differing levels. Site has the ability to increase font size to accommodate more than one student at the computer, or the visually impaired.	Some sites have the option of leveling a search to match the audience with the material.
Secondary	Ease of use.	Need longer video clips.
Secondary	Many good learning activities and resources Teacher to teacher sharing	
Secondary	Great information. Great resource.	Both of you work very well together and give very good information. Susan, you are a very knowledgeable and professional young lady. However, you use the word 'um' very frequently and that itself is very distracting. I mention this not to be mean, but to help you improve your presentation skills. Thanks for bringing such a great resource to our attention.
Secondary	The sources are previewed and quality and applicability is already assured	lack of a boolean 'not' operator in the search engine
Secondary	the ease of format and finding new resources	nothing that I noticed yet
Secondary	Great resource. Really helpful in generating ideas that went beyond 'cookbook' activities.	

		Sometimes too many hits come up, but with refining my search I can usually find out what I'm looking for. Some hits have a cost associated with them or cannot be accessed unless you're a member of the particular organization generating the resource.
Secondary	It's a 'science' digital library. It's great!	
Secondary	The variety and scope of info.	Nothing.
Secondary	Easy to navigate the website Helpful information	
Secondary	user friendly	can't remember any bad items
Secondary	Easy searches. LOTS of hits that were helpful	
Secondary	Ease of use Filter	
Secondary	The vast amount of free resources that are provided for teachers to enhance our teaching.	
Secondary	There was a lot of useful information/resources that I can't wait to use.	I wish I could match the search results to California's 8th grade Science Standards.
Secondary	Resources laid out, time to sign up and navigate sites and resources.	
Secondary	Students (middle school) had little trouble after a brief discussion on how to access NSDL, getting data for a lab project as part of a lesson plan.	
Secondary	Selection of resources, availability of middle school portal.	
Secondary	The ability to download into Powerpoint.	
Secondary	Awesome resources!	A lot of info...almost too much!
Primary	Fast access to info.	Not always in a lesson plan format I can use.
Primary	I haven't had the opportunity to use it yet.	
Primary	I cannot remember what resource I got from NSDL. I'm sorry. I search quite often for online resources. I especially enjoy finding interactive sites that teach to elementary students.	Again, I would have to visit again, which I'm sure I will in the future. Right now, I am trying to get ready for the beginning of the year, but I will visit it in the near future.
Primary	It's easy to find resources/information.	
Primary	Sorry, but I have not use it.	
Primary	ease of use	nothing
Primary	easy to use	
Primary	comprehensiveness and ability to easily search in a variety of ways	NA
Primary	It is online.	
Primary	I have really enjoyed the teaching videos. They can enhance teaching for teachers in the classroom or serve as professional development.	Cost.
Primary	accuracy variety	
Primary	I can't tell yet, I need more time to process all this awesome info! WOW!	The part about AP stuff, but only because I teach elementary school.
Other	search process provides many resources around a topic. Most seem to be designed	It seems hard to narrow the search by resource type and grade level.

	with good instructional practices	
Other	Ready access to information in a useable form.	The search component does not always yield the most relevant articles.
Other	The easy access to the site without having to have a password.	I have not used the site enough to comment negatively about it.
Other	I have not used NSDL.	I have not used NSDL.
Other	I found it to be very helpful overall, and I like the wide array of resources available.	The search function was a little clunky
Other	It is clear, concise and easy to use.	nothing.
Other	NSDL offers teachers resources and teaching strategies to improve student learning and motivation. As a library media specialist resource there is much to recommend to teachers.	Nothing. I did not evaluate. I just look for resources for my shareholders that are free.
Other	wide variety of resources and levels	navigation is not intuitive. it needs to be easier if you hope that students will use it, actually, even if you want teachers to use it it should be easier.
Other	Simple to navigate for teachers to find what they need. The Top Picks are often interesting	Nothing
Other	Ease of use	
Other	Resources and Internet Articles, as well as resources for my science methods students	nothing comes to mind that I dislike
Other	high quality , accuracy	under K-12 I could not search for lesson plans by subject area.
Other	I regret that I have not taken time to review the many resources on NSDL.	I regret that I have not taken time to review the many resources on NSDL.
Other	Easy of use. Covers all science content areas. I do not view NSDL as a curriculum. I view it as a resource to incorporated into an established curriculum.	Develop NSDL into a spiraling science curriculum for K-12.
Other	Convenience	
Other	Easily accessible, readily available	Not used it as curriculum
Other	Integrated environment for relevant literature and other information in science	
Other	I haven't used it much-can't really remember much about it.	I haven't used it much-can't really remember much about it.
Other	Clean, easy to use	
Other	I haven't actually ever used it	
Other	I honestly haven't used it yet.	I honestly haven't used it yet.
Other	Ease of use for teachers of math and science	
Other	In my job as a librarian, I need to access quality materials both for students and for teachers. NSDL helps me do both. I have also recommended NSDL to former students who are now in college looking for quality resources.	
Other	Well organized Easy to search Updated regularly	Must be online to access; difficult to share with students in a limited computer classroom.
Other	The REAL science resources - nothing	I think it's a terrific site but predict (having

	dumbed down. The advantage is that teachers can use the resources as they see fit - no explicit lesson plans that might not work in someone's teaching scheme. Some, however would view that as a disadvantage.	worked with staff in many different schools) that new teachers and many veteran teachers may require some suggested ways to integrate this material. Also, primary level teachers will not spend much time with the site. The site really relates more to fourth grade and beyond.
Other	Pretty easy to use	
Other	Incredible amount of resources. Range of topics covered	
Other	Lesson Plans, easy access.	So broad, lots of unusable data.
Other	Screened resources.	You have to have knowledge to use the site.... this is not 'Lib for Dummies.'
Other	Ease of use; great graphics; most current up to date information; eye appeal (format) especially for students; can find just about any topic in science that you are researching	Had to made hard copies when I wanted to flip back for referencing/reviewing areas of interest ---but all internet sites require that---; need more non fiction material for the lower elementary grade levels and for non-readers/below proficient readers

APPENDIX B: THE PAPER/BOOTH USER SURVEY**Location:****Date:****1. Identify your primary role when you used NSDL**

- Postsecondary educator or teaching assistant
 Researcher or post-doctoral scholar
 High school teacher
 Middle school teacher
 Elementary school teacher
 Curriculum developer
 Other

2. If 'Other,' please briefly describe your primary role**3. After using NSDL, on a scale of 1 (Not likely) to 5 (Very likely), how likely are you to:**

	1	2	3	4	5	N/A
	NOT LIKELY				VERY LIKELY	
Use NSDL resources in my teaching and research	0	0	0	0	0	0
Use NSDL resources for lecture or lab enhancement	0	0	0	0	0	0
Download an NSDL resource	0	0	0	0	0	0
Incorporate new ideas and thinking in my teaching and research	0	0	0	0	0	0
Direct students to use NSDL resources	0	0	0	0	0	0
Submit a resource I used in teaching to NSDL	0	0	0	0	0	0
Tell a colleague about NSDL	0	0	0	0	0	0
Make no further use of NSDL	0	0	0	0	0	0

4. What did you like most about NSDL?

5. What did you like least about NSDL?

6. May we contact you at a later date to ask you about your experiences of using digital resources, and using NSDL?

- Yes.
- No.

7. If yes, please supply a contact name and an e-mail address where we may reach you. These will be kept confidential and will only be seen by the researchers.

Name _____

E-mail _____