NSDL Audience Survey Report:
Who uses NSDL?
Spring 2010

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On behalf of NSDL Technical Services

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Abstract

The TNS Spring Work Plan and Priorities document (January-June 2010) identified a need to gather more information on the characteristics of the users of NSDL.org and their reasons for coming to the site. To address this, a "pop-up" survey was developed and deployed for a two week period in mid-April. During this time period 520 users responded to the survey. Users were predominantly educators (55%) and students (23%) affiliated with high school, middle school and undergraduate education. The most common purpose selected was "Looking for a resource to teach a specific concept or standard" and 84% of visitors were very or somewhat successful in fulfilling their purpose. Reasons cited by those not successful included a lack of returns for a specific topic, a lack of student-centered materials, interface usability issues, and content inaccessible due to either broken URLs or password-protected sites. This report provides information on the development and deployment of the survey and additional detail on user responses to both structured and free text questions.

Technical approach and implementation

The goal in implementing the survey was to put it in the path of the user but not obstruct their ability to carry out their intended interaction with the library website. To accomplish this the survey was presented as a "pop-up" at the bottom of the users open window, 30 seconds after entering the main NSDL.org site, the NSDL Science Literacy Maps, or the NSDL Landing Pages. Google Analytics was used to determine the average time on site for visitors to these pages. 30 seconds was chosen because it was shorter than the average time for the NSDL Landing pages, which had the shortest average time of the three sites surveyed.

The user had the ability to open and close the survey window so as to come back to it later if desired. A short series of questions were developed such that the survey could be completed in less than 5 minutes. Respondents were asked to indicate their zip code (if in the US) and then select their group affiliation (educator, student etc.) from a list of choices, and indicate grade level affiliations. Five choices, plus a free text option were provided for identifying a user's main purpose for visiting the site and whether the visit was successful. If not successful, a free text option invited respondents to share why, while a final optional field allowed for additional comments and feedback. See Appendix A for the complete survey with possible responses. Cookies were implemented so that the survey was suppressed for repeat visitors until three days had passed.

The survey questions and the underlying technology were refinements of a survey previously implemented in the NSDL Curriculum Customization Service pilot study and prior work with the SMILE pathway at the Exploratorium. The survey was implemented with jQuery 1.4.2, the jQuery metadata, validation, form and cookie plugins, as well as some custom JavaScript and PHP to save the data in a MySQL database. An alternate version using the Prototype JavaScript library was created in the NSDL Science Literacy Maps so as to not conflict with the Strandmaps API. The survey code is freely available for use by other NSDL projects in their own websites.

Deployment began April 7, 2010 and continued for two weeks.

Results

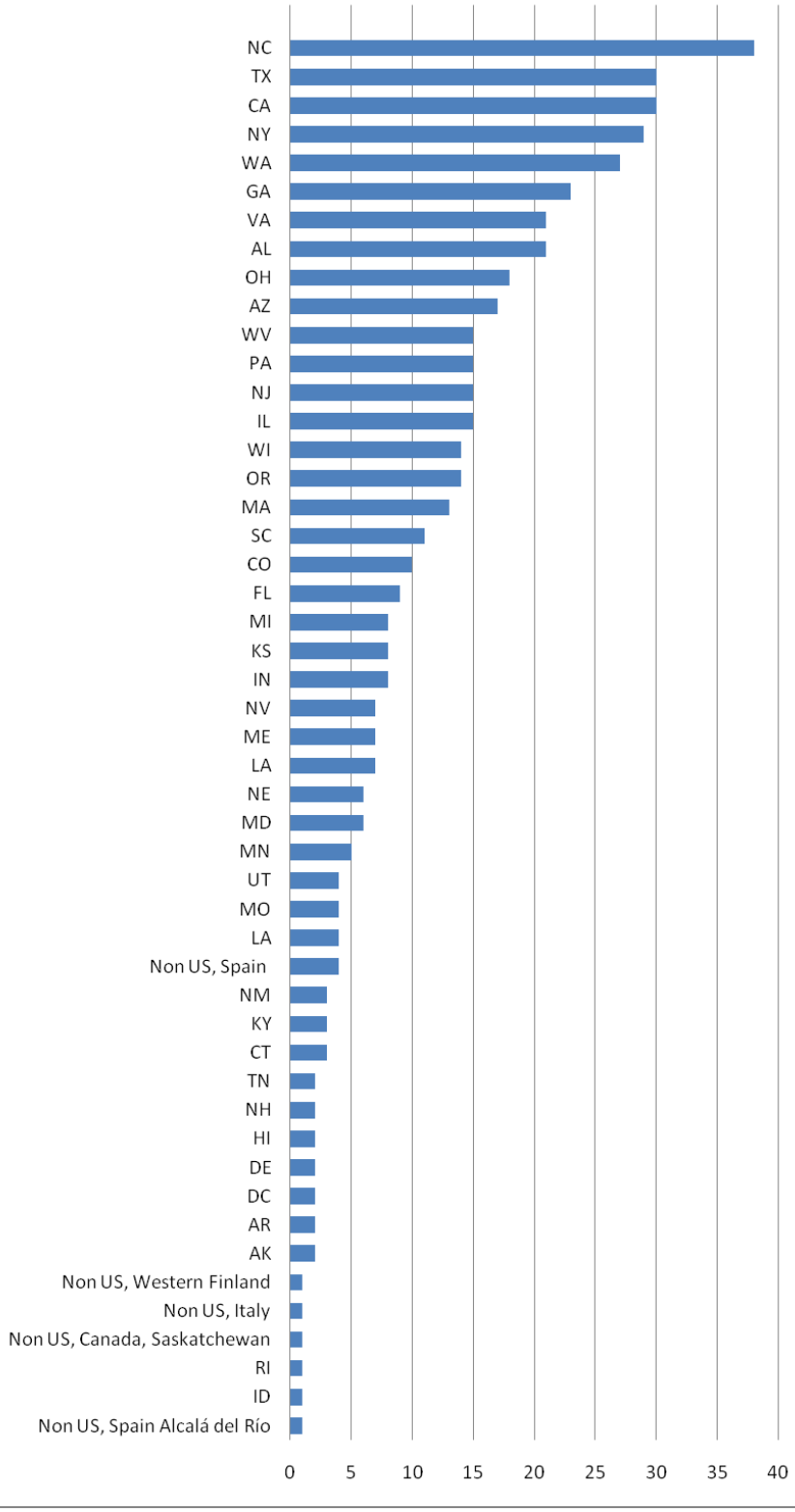
A total of 520 responses were tallied during the two week deployment period. This represents an estimated 15.7% response[1] rate of total visitors to the site during that time. Although 22.5% of respondents submitted forms from the main nsdl.org page, the majority responded from other pages, including search results, the Science Literacy Maps and other supporting informational pages. Users that submitted the form from the main NSDL.org homepage may have travelled back to the homepage after delving deeper into the site, hence this does not necessarily indicate that they submitted the form before exploring the library's offerings. Further analysis of server web logs is needed to determine user paths prior to submitting the survey.

The majority of respondents were from the United States (42 states), however 23% (n=120) indicated they were from outside of the US. Only 7 non-US respondents indicated their country of origin (Spain, Italy, Finland and Canada). See Figure 1 for the distribution of respondents by state or known country of origin.

Approximately 65 responses were flagged as spam and were excluded from the results analysis. These responses either had advertisement links, entries that included random letters as responses or bypassed validations.

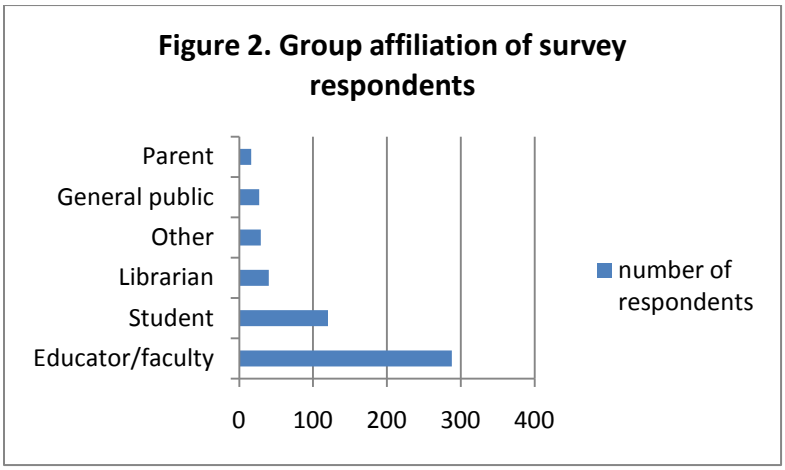
[1] The estimated rate was calculated using Google Analytics by looking at the approximate number of non-repeating visitors at NSDL.org and the NSDL Science Literacy Maps who were on the site for more than 30 seconds between April 7, 2010 and April 21, 2010.

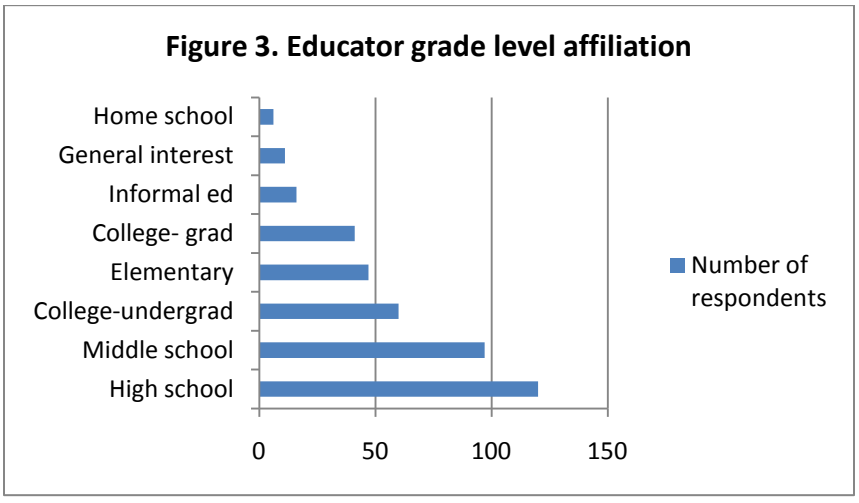
Figure 1. Geographic Distribution of Respondents to NSDL User Survey; April 7-21, 2010 (excluding unknowns)



Who is using NSDL?

Respondents were asked to identify themselves as primarily affiliated with one user group. The distribution of these groups is depicted in Figure 2. Educator/faculty was the most frequently selected group at 55.4% (n=288). Of these, 41.6% had an affiliation with high school, 33.6% with middle school and 20.8% with undergraduate level instruction (Figure 3). Respondents were allowed to choose more than one grade level affiliation. Students accounted for 23% of the respondents (n=120). College undergraduates comprised the largest group of students (33.3% n= 40) followed by graduate students (26.6 % n=32). High school students comprised 23.3% of the students visiting the site, followed by middle school students at 9%. The remaining respondents represented librarians (7.7%), "other" (5.6%), general public (5.2%) and parent (3.1%).





For what purpose are users visiting NSDL?

Respondents were asked to indicate one main purpose for their visit to NSDL from a list of five choices, or to provide a free-text response if nothing fit their intended goal. The main purpose selected by 35.2% of users across all groups was "looking for a resource to teach a specific concept or standard" followed by "looking for material to further my own knowledge on a topic" (17.3%). Table 1 depicts the distribution of the responses to the choices available. Forty-three people submitted additional comments through the "Other" choice to either elaborate on their choice or indicate a purpose not described by the slate of choices. The types of "Other" purposes submitted ranged widely, from collection builders looking to contribute to the library, to people looking specifically for the Science Literacy maps, support for research proposals, professional development, and general interest.

Table 1.

Purpose	*Count*	*%*
Looking for a resource to teach a specific concept or standard	*183*	*35.2*
Looking for material to further my own knowledge on a topic	*90*	*17.3*
Just browsing	*74*	*14.2*
Completing a homework assignment	*67*	*12.9*
Looking for information about or access to NSDL tools and services	*63*	*12.1*
Other	*43*	*8.3*

Not surprisingly, when examined by group affiliation, the educator/faculty group was predominantly "looking for a resource to teach a specific concept or standard" (51.7%) and students were predominantly "completing a homework assignment" (42.5%). Librarians were "just browsing" (32.5%) or "looking for information about or access to NSDL tools and service" (27.5%). General public users were "looking for material to further my own knowledge on a topic" (51.9%) or "just browsing" (25.9%), while parents' purposes ranged widely over all the categories of purposes. See Appendix B for a detailed look at the distribution of purpose by group and success rates.

Success of purpose

Over all users and purposes combined, respondents reported being very successful (42%) or somewhat successful (42%) in achieving their main purpose. Only 4.6% reported being not at all successful, and the remainder of the respondents skipped the question. Looking at success rates across the five different purpose choices reveals that no one purpose is a clear leader in terms of user success in achieving that goal. The more interesting and instructive examination is to look at the comments offered in conjunction with users not being successful in meeting their goal. The most common reason offered for not being successful was that the survey itself got in the way of their work, by popping up too soon before they had completed their task, or because the user did not realize they could continue their work and bypass it until ready to respond. This barrier will need to be addressed and solved in future deployments of surveys of this nature. Disregarding this technical hitch, other reasons for not being successful focused on four things: 1) not finding a return for a specific keyword search or topic, 2) not finding a student-centered resource in response to the query, 3) technical and access issues such as broken links or password-protected content, 4) user confusion or dissatisfaction about the interface itself.

A selection of specific comments offered for the four main reasons for not being successful follow:

1) <u>Not finding a return for a specific keyword search or topic.</u>

- *Why is "Groebner basis" not found?*

-*trying to find information about U.S. Climate zones*

- *I'm looking for a recent article related to Automatic Speech Recognition*

- *I need articles about blending science and math to teach across the curriculum*

2) Not finding a student-centered resource in response to the query.

- Items on this site are often too simple or extremely complicated; there's usually little middle ground. I just wish I could get my students to search this site instead of using google & wikipedia.

- still unsure what site offers for students

-TELL ME WHEN THE ATMOTHPHERE WAS FORMED

-wanted resources that students could understand

3) Technical and access issues such as broken links or password-protected content.

-unable to open the lesson plan

-Too many blocks and passwords - have to pay for too much stuff. What rubbish!

-sources not "vetted" for quality

4) User confusion or dissatisfaction about the interface.

- Couldn't figure out how to use the search

-If I am unable to browse, how do I determine whether or not to become a member? If that's possible!

-The working area were too small

-Many links did not work.

Excluding the catch-all purpose "other", "completing a homework assignment" was the purpose with the least success at 6%. Although this seems like a low percentage, it is the predominant purpose reported by the student group in this survey, hence may indicate an important user group and purpose that is not being adequately served at present. One student submitted this comment:

"It's too complicated! I can't get my head round what your talking about. If it's possible could you convert it into simpler language for like 11-13 yr olds! I just don't get it!"

Additional comments and feedback

Forty-five respondents offered additional comments in the final free-text submission field. A dozen of these constituted short positive greetings such as *"Very nice site!", "Keep up the good work!" and "I love this place!"* Several respondents indicated that they planned to share the site with their peers, while other, more detailed positive comments included the following:

> *"In 1 hour I was able to identify and catalog the essential understandings and standards for planning the Evolution unit. I also found current web-based activities and resources. I was also able to construct an excel-based unit plan. This resource makes me efficient!"*
>
> *"Absolutely love the site and the resources. Kudos on bringing the research and practice together in an accessible way."*
>
> *"I appreciate the good quality, reliable information. Who knows what false info one will find on google, wikipedia, etc."*

Two comments pertained to the Science Literacy Maps; one positive and one expressing some concern:

> *"I use the literacy maps frequently for lesson planning to make sure I'm focusing on big ideas."*
>
> *"Science Literacy maps don't seem to get me to same content that I know is in NSDL through keyword search."*

Comments reflecting a frustration or a specific suggestion included:

> *"Who or what is NDSL? Your homepage is anything but clear concerning your institution."*
>
> *"Citation creation would be great but this site really is amazing. thank you"*
>
> *"Increasing the working area would make this 90% perfect. Allowing custom load input will make this 100% perfect. It is still good nonetheless. Thanks!"*
>
> *"You reach out to science teachers, but you are missing the special ed teachers, I think. I teach 3 sciences and look for as many web sites to help with my teaching."*

Summary

The data provided here reflects the input of a group of 520 NSDL users during April of 2010 and has helped to provide documentation about who is coming to the library for what purposes and their success at accomplishing their purpose. The responses to the survey indicate that educators and faculty at the middle and high school level are the main visitors to the site, while the student visitors tend to be at the undergraduate and college level. Success levels are consistently positive (very or somewhat successful) for most purposes. Areas where improvement could be made are evident when the data associated with not successful use are examined more closely. Student use of the site for homework, and educators search for student-centered resources resulted in frustration for some users. Not all search queries resulted in satisfying results, either because the keyword search returned nothing on the topic or because the resulting resource links were broken or behind a password-protected block. Some users found the NSDL interface difficult to navigate, reporting information overload as well as confusion as to how to search at all. Free-text comments overall were positive, but did include several substantive suggestions on specific issues or ideas for features or audience focus. As IP addresses were gathered during the survey, these could be used for further analysis of web logs to correlate success with what paths people took to achieve their purpose. This could help influence future redesign efforts for the website and provide insight into which pages are effective or ineffective.

The response rate for the survey (15.5%) was average for this type of deployment, however there is room for improvement in the integration of the survey into the site, such that a user has time to complete their task before responding, and/or the ability to delay responding is more intuitive. Improving this will hopefully result in fewer answers of the nature “I don’t know, I haven’t completed my task yet, I just got here”. Seventeen respondents made comments of this ilk. This should be addressed before the survey is deployed again in the fall and be included in the code that is available for other pathways and projects to utilize in their own sites.

Appendix A:

NSDL “pop-up” survey questions.

1. Please indicate your zip code:

2. Please identify yourself as primarily:
    - Educator/faculty
    - Student
    - Parent
    - Librarian
    - General public
    - Other

3. What grade level are you/do you work with? <check as many as apply>
    - Elementary school
    - Middle school
    - High school
    - college- undergrad
    - college- graduate
    - home school
    - informal education
    - General interest

4. What is your main purpose for visiting NSDL today? < choose one >
    - Looking for a resource to teach a specific concept or standard
    - Looking for material to further my own knowledge on a topic
    - Completing a homework assignment
    - Just browsing
    - Looking for information about or access to NSDL tools and services
    - Other (free text)

5. Were you successful in fulfilling your purpose?
    - Very successful
    - Somewhat successful
    - Not at all

6. If not, why were you not successful?
7. Any additional comments and feedback?

Appendix B. Success of purpose by role for respondents to April 2010 NSDL User Survey.

Submitter Roles	**Count**	**%**	**Purposes**					
Educator/faculty	288	55.4	**Purpose**	**Count**	**%**	**Success**		
			Looking for a resource to teach a specific concept or standard	149	51.7	**Purpose Success**	**Count**	**%**
						Very successful	68	45.6
						Somewhat successful	56	37.6
						Skipped Question	21	14.1
						Not at all	4	2.7
			Just browsing	43	14.9	**Purpose Success**	**Count**	**%**
						Somewhat successful	21	48.8
						Very successful	15	34.9
						Skipped Question	6	14
						Not at all	1	2.3
			Looking for material to further my own knowledge on a topic	34	11.8	**Purpose Success**	**Count**	**%**
						Very successful	16	47.1
						Somewhat successful	11	32.4
						Skipped Question	4	11.8
						Not at all	3	8.8
			Looking for information about or access to NSDL tools and services	27	9.4	**Purpose Success**	**Count**	**%**
						Very successful	15	55.6
						Somewhat successful	8	29.6
						Skipped Question	4	14.8
			Other	25	8.7	**Purpose Success**	**Count**	**%**
						Very successful	14	56
						Somewhat successful	10	40
						Skipped Question	1	4
			Completing a homework assignment	10	3.5	**Purpose Success**	**Count**	**%**
						Very successful	5	50
						Somewhat successful	4	40
						Skipped Question	1	10

Student	120	23.1	**Purpose**	**Count**	**%**	**Success**		
			Completing a homework assignment	51	42.5	**Purpose Success**	**Count**	**%**
						Somewhat successful	26	51
						Very successful	23	45.1
						Not at all	2	3.9
			Looking for material to further my own knowledge on a topic	27	22.5	**Purpose Success**	**Count**	**%**
						Somewhat successful	14	51.9
						Very successful	8	29.6
						Skipped Question	4	14.8
						Not at all	1	3.7
			Looking for a resource to teach a specific concept or standard	20	16.7	**Purpose Success**	**Count**	**%**
						Somewhat successful	11	55
						Skipped Question	4	20
						Very successful	3	15
						Not at all	2	10
			Looking for information about or access to NSDL tools and services	8	6.7	**Purpose Success**	**Count**	**%**
						Somewhat successful	3	37.5
						Skipped Question	2	25
						Very successful	2	25
						Not at all	1	12.5
			Other	8	6.7	**Purpose Success**	**Count**	**%**
						Very successful	4	50
						Not at all	3	37.5
						Somewhat successful	1	12.5
			Just browsing	6	5	**Purpose Success**	**Count**	**%**
						Somewhat successful	5	83.3
						Very successful	1	16.7

Librarian	40	7.7	**Purpose**	**Count**	**%**	**Success**		
			Just browsing	13	32.5	**Purpose Success**	**Count**	**%**
						Very successful	9	69.2
						Somewhat successful	4	30.8
			Looking for information about or access to NSDL tools and services	11	27.5	**Purpose Success**	**Count**	**%**
						Somewhat successful	7	63.6
						Very successful	4	36.4
			Other	5	12.5	**Purpose Success**	**Count**	**%**
						Very successful	2	40
						Skipped Question	1	20
						Not at all	1	20
						Somewhat successful	1	20
			Looking for a resource to teach a specific concept or standard	4	10	**Purpose Success**	**Count**	**%**
						Very successful	2	50
						Somewhat successful	2	50
			Looking for material to further my own knowledge on a topic	4	10	**Purpose Success**	**Count**	**%**
						Somewhat successful	3	75
						Skipped Question	1	25
			Completing a homework assignment	3	7.5	**Purpose Success**	**Count**	**%**
						Not at all	1	33.3
						Somewhat successful	1	33.3
						Skipped Question	1	33.3

Other	29	5.6	**Purpose**	**Count**	**%**	**Success**		
			Looking for information about or access to NSDL tools and services	9	31	**Purpose Success**	**Count**	**%**
						Very successful	6	66.7
						Somewhat successful	3	33.3
			Looking for material to further my own knowledge on a topic	6	20.7	**Purpose Success**	**Count**	**%**
						Somewhat successful	5	83.3
						Very successful	1	16.7
			Looking for a resource to teach a specific concept or standard	6	20.7	**Purpose Success**	**Count**	**%**
						Somewhat successful	4	66.7
						Very successful	1	16.7
						Skipped Question	1	16.7
			Other	5	17.2	**Purpose Success**	**Count**	**%**
						Somewhat successful	2	40
						Not at all	2	40
						Skipped Question	1	20
			Just browsing	3	10.3	**Purpose Success**	**Count**	**%**
						Somewhat successful	2	66.7
						Very successful	1	33.3

General public	27	5.2	**Purpose**	**Count**	**%**	**Success**		
			Looking for material to further my own knowledge on a topic	14	51.9	**Purpose Success**	**Count**	**%**
						Very successful	7	50
						Somewhat successful	5	35.7
						Not at all	1	7.1
						Skipped Question	1	7.1
			Just browsing	7	25.9	**Purpose Success**	**Count**	**%**
						Somewhat successful	5	71.4
						Very successful	2	28.6
			Looking for information about or access to NSDL tools and services	6	22.2	**Purpose Success**	**Count**	**%**
						Very successful	2	33.3
						Skipped Question	2	33.3
						Not at all	1	16.7
						Somewhat successful	1	16.7
Parent	16	3.1	**Purpose**	**Count**	**%**	**Success**		
			Looking for material to further my own knowledge on a topic	5	31.3	**Purpose Success**	**Count**	**%**
						Very successful	3	60
						Skipped Question	1	20
						Somewhat successful	1	20
			Looking for a resource to teach a specific concept or standard	4	25	**Purpose Success**	**Count**	**%**
						Very successful	2	50
						Skipped Question	2	50
			Completing a homework assignment	3	18.8	**Purpose Success**	**Count**	**%**
						Somewhat successful	1	33.3
						Not at all	1	33.3
						Very successful	1	33.3
			Looking for information about or access to NSDL tools and services	2	12.5	**Purpose Success**	**Count**	**%**
						Very successful	1	50
						Somewhat successful	1	50
			Just browsing	2	12.5	**Purpose Success**	**Count**	**%**
						Somewhat successful	2	100