NSDL Audience Survey Report:
Who uses NSDL?
Spring 2011

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On behalf of NSDL Technical Services

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ABSTRACT

In an ongoing effort to understand current users of the NSDL as well as inform future work Technical Network Services deployed a user survey integrated into NSDL.org for a second year, from February 16-March 2, 2011. The survey was also deployed in four other Pathway sites; DLESE, comPADRE, AMSER, and MSP. A total of 2170 responses were analyzed for role, grade level affiliation, purpose for visit and success of completing purpose, across all sites and within each site. Across all sites high school students and high school educators comprised the largest user group, though individual sites had expected variation of this based on the audience focus of the collections. Overall success rates reported by respondents were favorable, though additional comments by some respondents offered criticism and suggested areas for improvements at some of the sites. This report provides information on the technical deployment of the survey, summarizes the results of the core data collected and provides selected additional detail on user responses to free text questions.

INTRODUCTION

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, 45 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. This was a 15 second increase from last year's timing, in response to comments from respondents that they had not yet completed their task before being presented the survey. Additional instructional text asked users to respond after they had completed their task and informed them how to minimize the window until ready to respond.

A short series of questions were developed such that the survey could be completed in less than 5 minutes. Respondents were asked to provide a zip code (if within the US), select a group affiliation (educator, student librarian etc.) from a list of choices, and indicate grade level affiliations. More than one grade level affiliation was allowed to accommodate those users who serve more than one population. 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. The survey was essentially the same as the one deployed last year, with only minor changes in timing and text and the addition of "pre-service teacher" to role choices and "community college" and "teacher education" as a grade level affiliation. See Appendix A for the complete survey with possible responses.

TECHNICAL IMPLEMENTATION

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. The survey form was modified to be constructed with JavaScript rather than as an HTML include and the processing was modified to use a local proxy file to send data to NSDL.org for inclusion in the database. Participating sites were expected to develop their own proxy file to send data to nsdl.org. An additional, hidden field was added to the form for each participating pathway to tag their results using a pre-determined keyword to identify their pathway. Cookies were implemented so that the survey was suppressed for repeat visitors until three days had passed.

Visitors were asked to provide their zip code or indicate if they were not from the United States by clicking a checkbox. Some participants indicated that they were from outside of the United States as well as providing a zip code. The provided zip codes were used to programmatically query against the Google Maps API to generate a list of countries and states or provinces,

however, not all of the provided zip codes were resolvable by the API. Zip codes may have been invalid due to human error on input or the Google Maps zip code database may be incomplete.

Deployment began February 16, 2011 and continued for two weeks. Sites participating in the survey were the NSDL main website, (nsdl.org), the NSDL Science Literacy Maps (http://strandmaps.nsdl.org), the Digital Library for Earth System Education (DLESE http://www.dlese.org), the Middle School Portal Online Social Network (MSP http://www.msteacher2.org/), the Applied Math and Science Education Repository (AMSER http://amser.org), and selected collections from comPADRE, each with a somewhat different audience; (The Physics Front http://www.compadre.org/precollege/, Open Source Physics http://www.compadre.org/osp/, Per Central http://www.compadre.org/per/, comPADRE, http://www.compadre.org/portal/, The Nucleus http://www.compadre.org/student/, Statistical and Thermal Physics http://www.compadre.org/stp/, Physical Sciences Resource Center http://www.compadre.org/psrc/, The Physics Source http://www.compadre.org/introphys/, The Quantum Exchange http://www.compadre.org/quantum/, Advanced Labs http://www.compadre.org/advlabs/, and Physics Classroom http://www.physicsclassroom.com).

The survey was available throughout the 2 weeks in all deployment sites except The Physics Classroom which only collected data for 1 day. The decision to collect for one day on the Physics Classroom was based on the desire not to disrupt the tutorial nature of the site and the large amount of traffic. Data were gathered from each site into a single database, and are analyzed here as aggregate as well as independently by deployment site.

ComPADRE modified their survey implementation to better integrate with their system and website users, which may have affected their response rate. They increased the number of days to suppress the survey for repeat visitors to eight days as opposed to the default three days and directed the survey to auto-minimize on page navigation as opposed to being left open on subsequent page loads.

RESULTS

Aggregate

Response rate

The survey was programmed to appear to website users 45 seconds after their first page view. This was an increase of 15 seconds from the previous year's timing due to user comments indicating that they had not had enough time to complete their tasks. Of the responses received, approximately 68 responses were flagged as spam and were excluded from the

results analysis. These responses either had bogus answers, identified by illogical responses as compared to comments, or entries that included random strings of letters to bypass validations.

Excluding the spam responses, a total of 2170 responses were considered in the analysis. NSDL.org and the NSDL Science Literacy Maps received 533 responses, 136 for DLESE, 25 for AMSER, 62 for Middle School Portal, and 1414 for comPADRE websites.

For NSDL websites, and MSP, a 45 second time on site filter was set up using Google Analytics' advanced segment feature. During the two-week survey period, NSDL.org and the NSDL Science Literacy Maps received 5013 visits that had a time on site greater than 45 seconds for a 10.6% response rate. DLESE received 1,402 visits that had a time on site greater than 45 seconds for a 9.7% response rate. Middle School Portal received 570 visits that had a time on site greater than 45 seconds for a 10.9% response rate.

AMSER was only able to provide raw counts for visits and does not take into account the initial 45 second window prior to any user being able to see the survey. Given this, the actual response rate for AMSER is likely to be significantly higher than calculated. During the two-week survey period, AMSER reported 6,680 total visitors for a response rate of 0.37% of all visitors to their website.

ComPADRE was able to filter out visits for the first 30 seconds of a visit but were unable to take into account visitors that were on the site for the 30-45 second range. Given this, the actual response rate for comPADRE is likely to be slightly higher. For the two-week survey period, comPADRE reported approximately 6,000 visitors to its primary websites of a duration for more than 30 seconds. For the single day that the survey was active on the Physics Classroom, the Physics Classroom website received approximately 14,192 visitors that were of a duration for more than 30 seconds.

Excluding The Physics Classroom, the comPADRE websites had a response rate of approximately 4.62% for the two-week survey period. The Physics Classroom had a response rate of approximately 8% for the single day that the survey was active on The Physics Classroom website.

Table 1. Distribution of responses and response rates across sites.

	comPADRE (excluding The Physics Classroom)	The Physics Classroom	NSDL	DLESE	MSP	AMSER
Raw count	277	1137	533	136	62	25
Response Rate	4.62%	8%	10.6%	9.7%	10.9%	0.37%

Roles

Respondents were asked to identify themselves as primarily affiliated with one user group or role, and could then indicate multiple grade level associations. High school students were the largest group represented (24.5% n= 532) followed by high school educators/faculty (20.1% n=437). Undergraduate students (10.5% n=228) and middle school educators (10.1% n=220) were the next largest group with similar levels of representation. Other roles had very low representation, with pre-service teachers at 4.8%; parents, librarians and general public ranged from 3.0 to 2.4% while "other" captured 3% of the responses. Figures 1 and 2 depict distributions of respondents for educators and students across all deployment sites. Librarians were fairly evenly distributed across the K-12 and college grade level choices. Parents were predominantly those of high school students, followed by elementary and middle school students. (n= 25, 15, and 8 respectively).

Figure 1. Grade level distribution (number of respondents) for student respondents across all survey deployment sites.

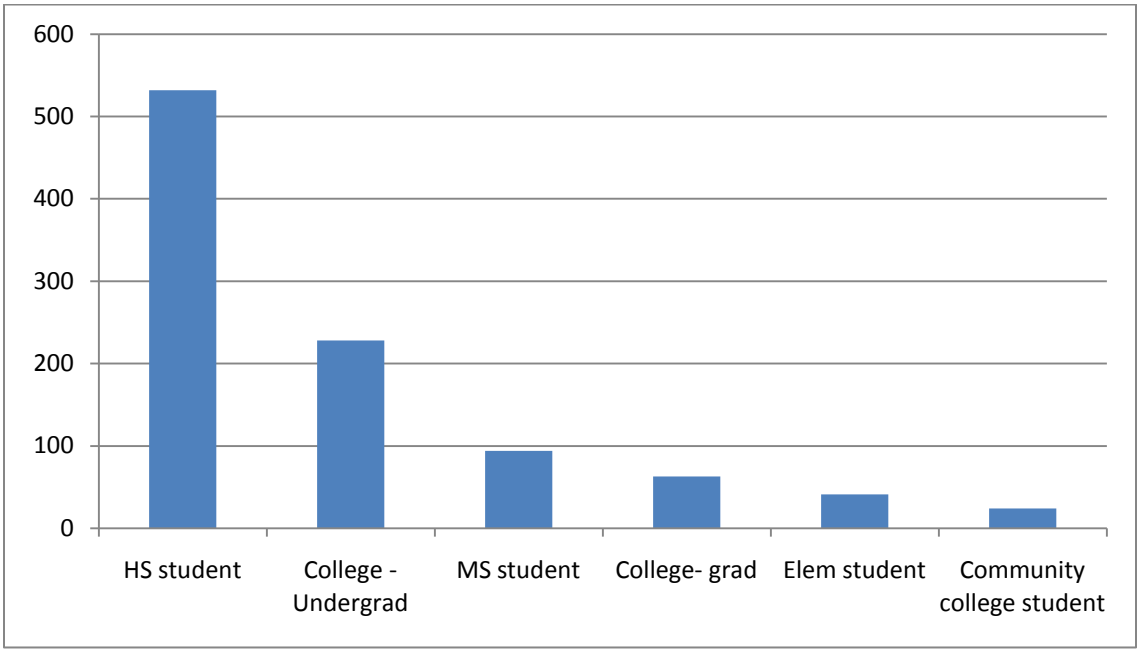
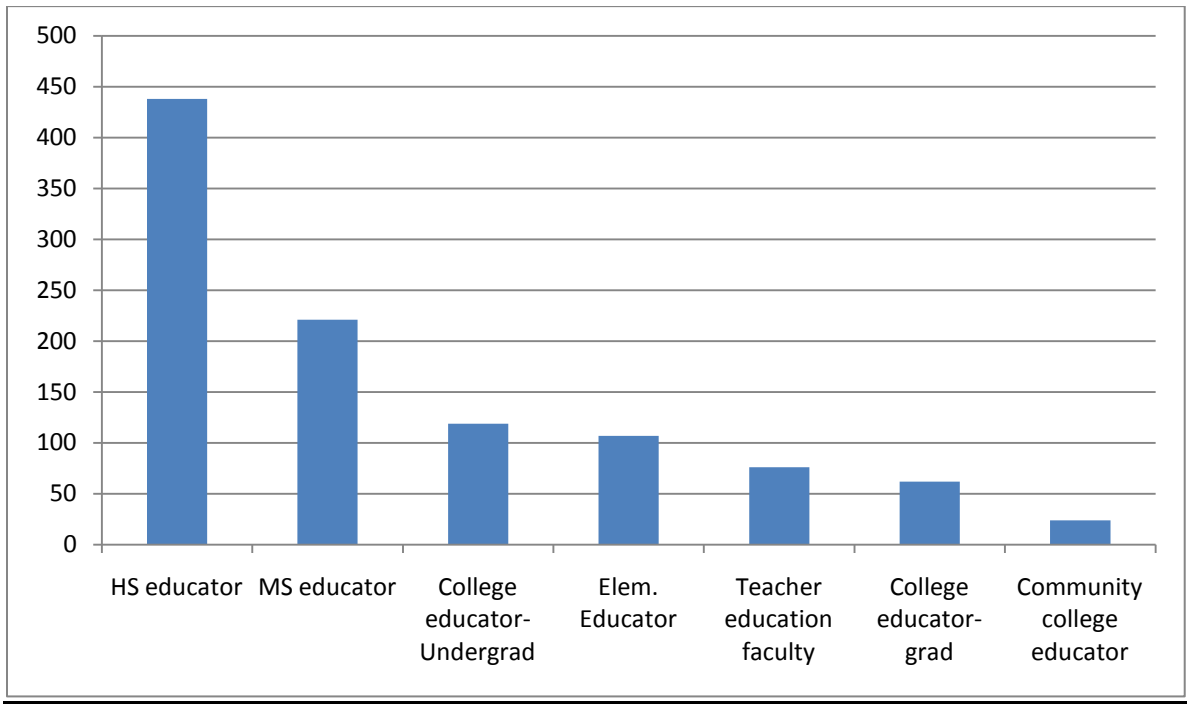


Figure. 2. Grade level distribution (number of respondents) for educator respondents across all survey deployment sites.



Purpose and success

Over all sites, the majority of visitors selected "looking for a resource to teach a specific concept or standard" as their main purpose (32.7% n=709) followed by "completing a homework assignment" (22.3% n= 483) and "looking for material to further my own knowledge on a topic" (21.9% n= 475). Overall success rates at the intended purpose were high, with 50.9% reporting "very successful" and 36.6% reporting being "somewhat successful" at completing their intended purpose. Educator/faculty reported a slightly higher "very successful" rate than students (57.3% versus 48.5%). Combining "very successful" and "somewhat successful" responses results in a 94% success rate for educators and 89% success rate for students. Although pre-service teachers were not a large group of visitors, their success rate was similar, with 61.1% reporting being "very successful" and 25% "somewhat successful".

The most frequent purpose chosen by high school student respondents was "completing a homework assignment", of which 49.6% were "very successful" and 42.6% were "somewhat successful". College undergraduates most frequent purpose was "looking for material to further my own knowledge on a topic", followed closely by "completing a homework assignment". Both these purposes were reported to be very or somewhat successful; 91.5% and 93.9% of the time respectively.

Educator/faculty respondents from high school, middle school, elementary school, college undergrad and graduate, community college and home school all chose "looking for a resource to teach a specific concept or standard" as their most frequent purpose for visiting the sites. Success rates for this purpose within each group (% of each group with this purpose in mind) are reported in Table 2 below.

Table 2. Success rates for educators by grade level for the purpose "looking for a resource to teach a specific concept or standard".

Educator/faculty grade level	Percent Very successful	Percent Somewhat successful	Percent Not at all successful
High school	61.6	34.3	1.3
Middle school	51.6	36.5	4.8
Elementary school	48.2	39.3	3.6
College undergrad	48.4	45.2	1.6
College graduate level	41.4	41.4	3.4
Community college	58.3	25.0	0
Home school	71.4	26.6	0

Educator/faculty serving teacher education were fairly equally divided in selecting "looking for material to further my own knowledge" and "looking for a resource to teach a specific concept or standard" and "other" as their main purposes, and reported a similar distribution of very and somewhat successful rates. "Other" purposes reported included: "writing an assessment item", "making an answer key for a study guide", looking for information on webinars and conferences, and "Need resource for students to practice concepts on their own".

Geographic distribution

Across all sites, 32.4% of the 2170 respondents identified themselves as coming from countries other than the United States. A zip code was provided by 1503 or 69.3% of respondents including 52 who indicated that they were from outside of the United States. Of the zip codes provided, 1468 responses were resolvable against the Google Maps API to determine the origin. Across all sites, 1357 or 62.5% of survey responses had resolvable zip codes from the United States. Figures 3 and 4 illustrate the geographic distribution of resolvable zip code or country of origin for the United States (by state) and by country.

Figure 3.

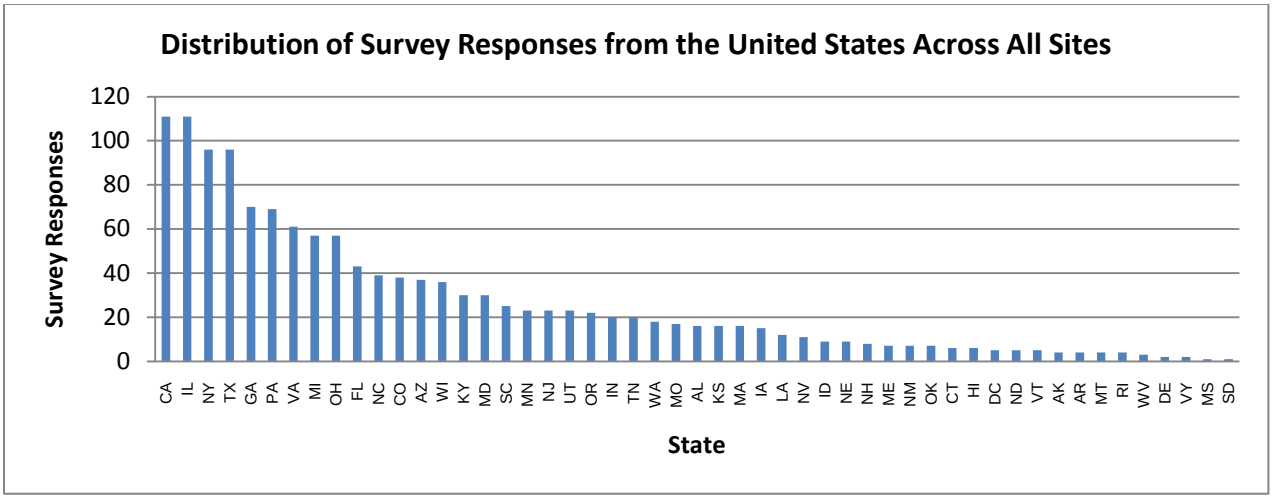
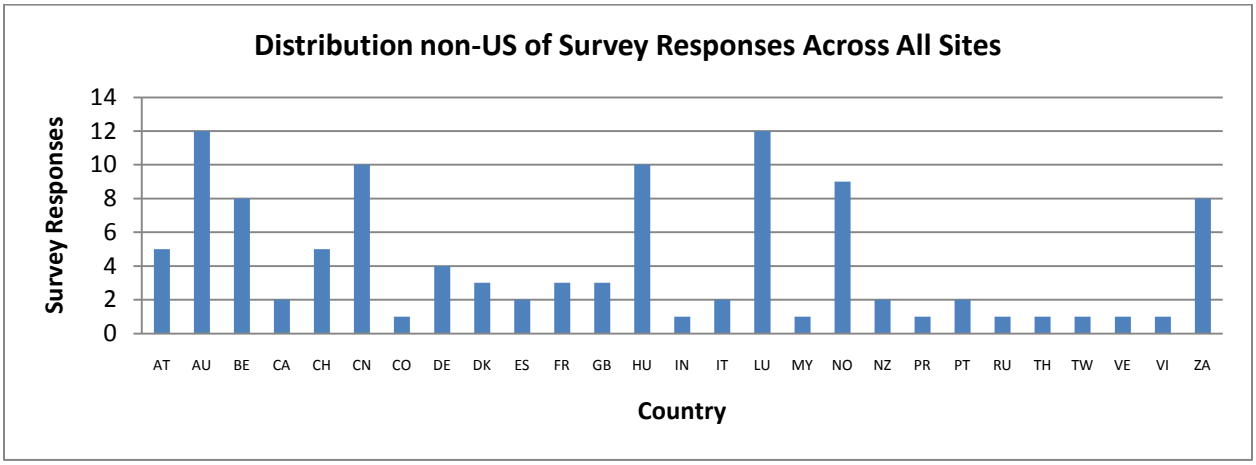


Figure 4.

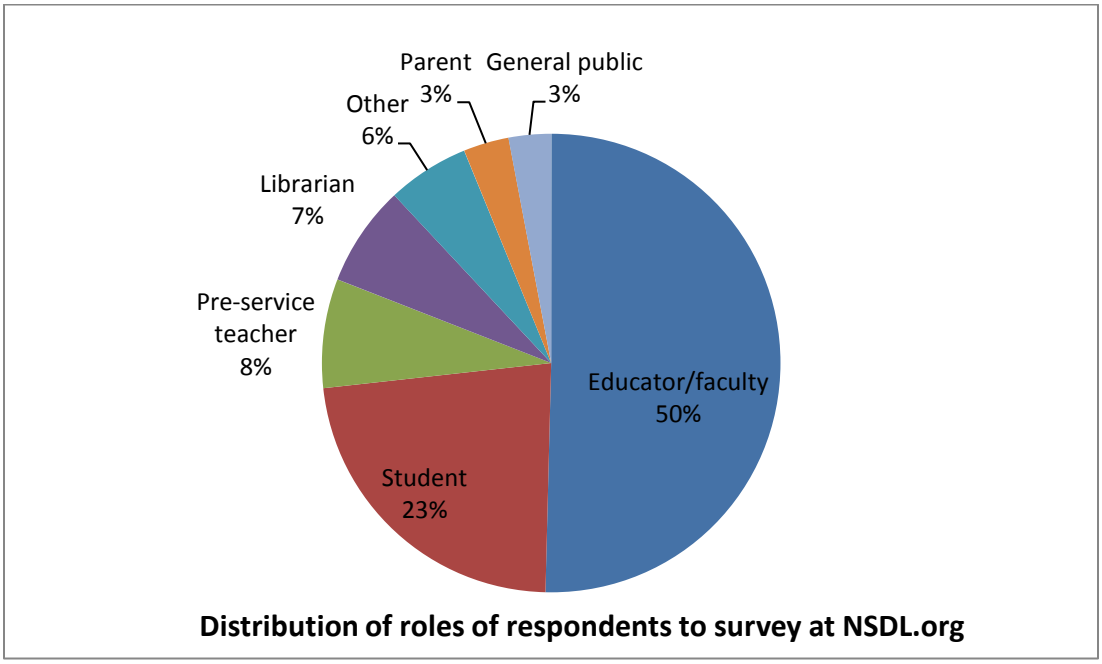


NSDL – National Science Digital Library

Roles

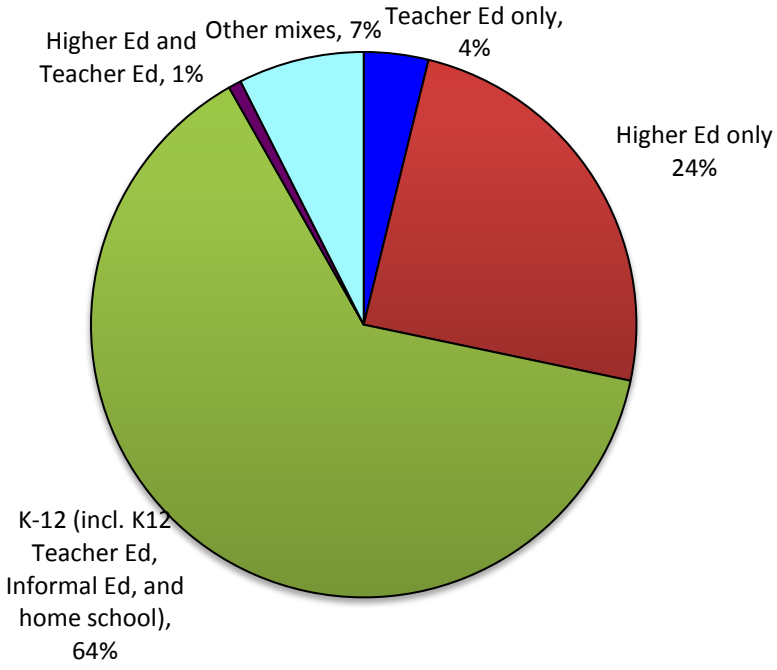
A total of 533 responses were received from NSDL.org and the NSDL Science Literacy maps combined, with 102 originating from the maps. The majority of the surveys in NSDL.org originated from a resource page (n= 133) followed by a search results page (n= 133). The main homepage was the originating point for 73 surveys, followed by the informational page on the Math Common Core Collection (n= 38). Educators comprised 50.5% of the 533 respondents to the survey, with middle and high school representing 20.3% and 19.3% respectively (See Figure 5). Elementary school educators were a close third at 14.4%. Students comprised 22.9% of respondents, with college undergraduates the largest group (6.8% n=36) and high and middle school at 5.1% and 4.7% respectively. Pre-service teachers represented 7.7% of respondents and librarians constituted 7.1% of the total respondents and these users were predominantly K-12 affiliated.

Figure 5. Percent distribution of roles for respondents to the survey at NSDL.org and Science Literacy Maps.



Respondents were able to select more than one grade level affiliation; hence the individual grade level counts provided may include people with multiple affiliations. When the data are examined to exclude any double counting of individual responses across K-12, the dominance of this educator audience for NSDL is dramatic (Figure 6 and analysis courtesy of L. Moin).

Figure 6. Distribution of educator grade level affiliations, combining K-12 respondents into a single group.



Purpose and success

The most frequent purpose selected across all respondents was "looking for a resource to teach a specific concept or standard" at 39.4%. Of these, users reported being "very successful" 48.1% of the time and "somewhat successful" 36.8% of the time. Educator/faculty respondents in all grade levels most frequently selected "looking for a resource to teach a specific concept or standard" as the purpose of their visit to NSDL. Students in all grade levels most frequently selected "completing a homework assignment" as their primary purpose for visiting NSDL at that time.

Table 3. Success rates for primary purpose for visiting NSDL for educators and students.

Role	Purpose	Very successful	Somewhat successful	Not at all	Skipped question
Educator	Looking for a resource to teach a specific concept or standard	41.8%	42.6%	5.7%	9.9%
Student	Completing a homework assignment	42.2%	42.2%	15.6%	0

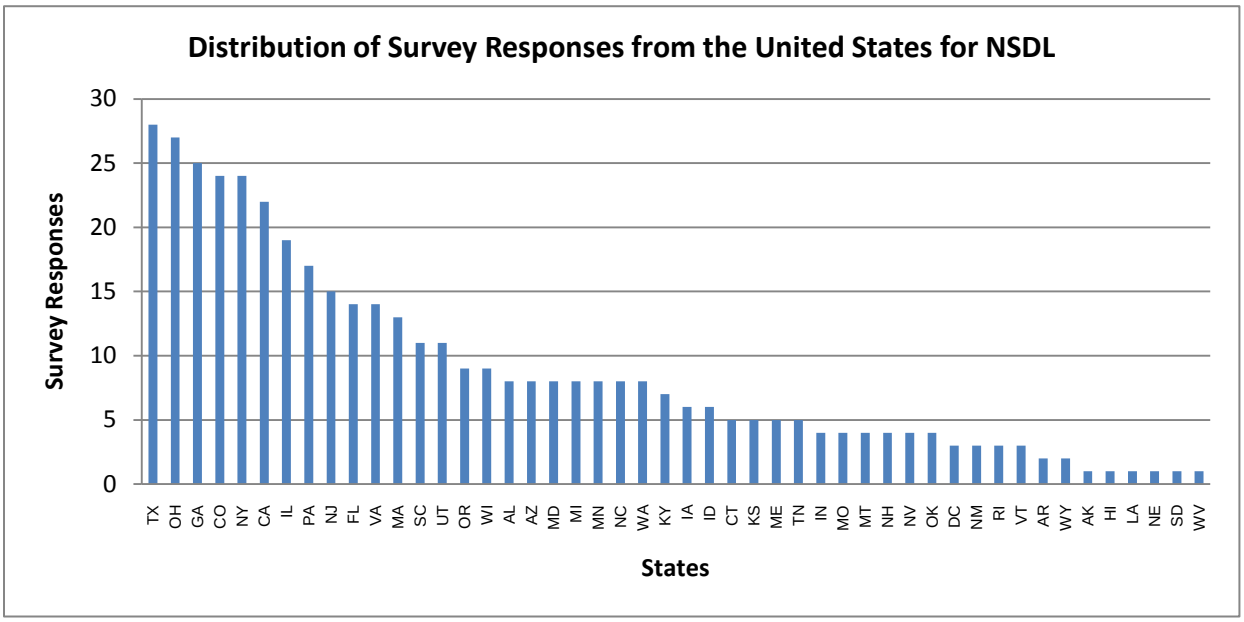
"Other" purposes were reported by 10.3% of respondents, and these ranged from very general to very specific in nature. General comments included "looking for quality sites to share with my faculty and students" from several librarians, including a reference to a recent article by teacher Dan Toomey on the site in the School Library Magazine. Several parents indicated they were "looking for info to enrich my kids' education" and students reported using the site for a research paper or project. The AAAS Science Literacy maps were also referenced as a purpose, including "to help decide the topics that I should focus on while teaching a subject" and "looking at how knowledge of a concept builds, and resources for a variety of concepts". A very specific purpose was "Looking for statistics on diseases to use in a graphing project with students. Year over year statistics for a specific disease such as Rabies" and resulted in an unsuccessful experience. Another very specific purpose, reported by a librarian, was very successful however; "looking for climate change resources for a researcher/educator in Malawi, who needs free access to data and information; I pointed out education for K-12 levels." Kudos included; "This is the future of science education in primary and secondary school regarding standards", and "I love this site. I often use it to find material for teachers or refer them here."

One theme in the critical comments received was a frustration with the search protocol, and the inability to request and receive very specific resource content or resource type: "I wanted to find out what the gas we put in our cars are made of. Instead I got greenhouse gases (student), "Search engine is difficult to narrow down" and "You need to tighten your filters...10,000 results is like having no results at all. Filter keeps giving me activities; when I specifically want texts." It is important to note that a new search service was released soon after this survey was closed and hence these comments are not a reflection of the current functionality in NSDL. This issue was a known problem and the service and interface was developed to address this problem.

Geographic distribution

NSDL had 533 responses with 133 or 21.2% of participants identifying themselves as coming from countries other than the United States. Of the 429 or 80.5% of participants providing a zip code, 9 were from outside the United States, including France, Canada, China and Spain. Of the zip codes provided, 425 were resolvable against the Google Maps API to determine the origin. All but 12 zip codes resolved to a city in the United States (See Figure 7). Forty-eight different states were represented in this sample with the largest representation from Texas and Ohio, followed by Georgia, Colorado and New York.

Figure. 7

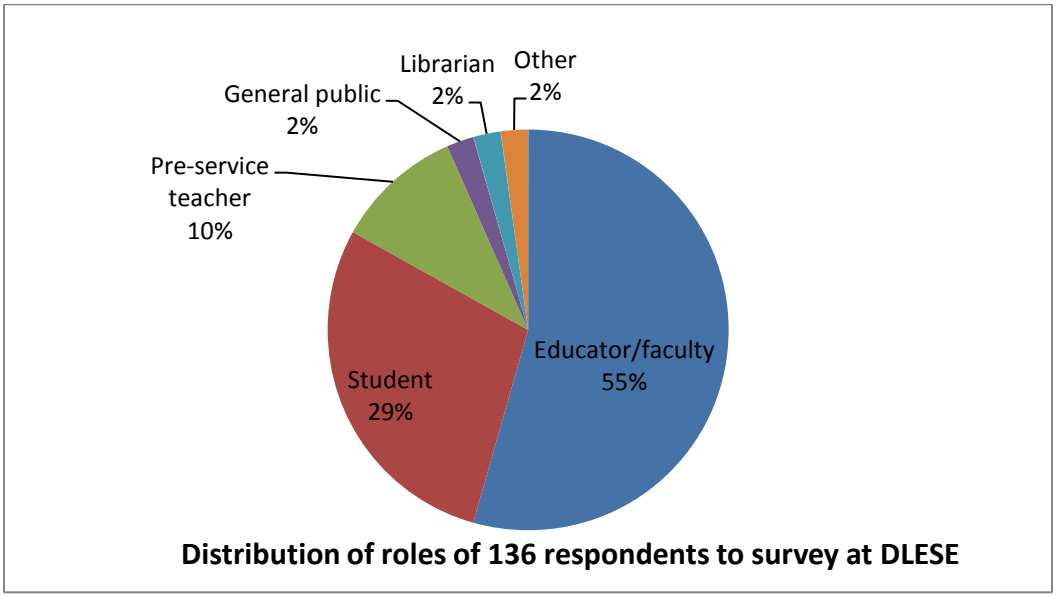


DLESE- Digital Library for Earth System Education

Role

A total of 152 surveys were submitted at the DLESE deployment site, representing a response rate of 9.7% for visits of 45 seconds or more. Surveys were submitted from a query results page 46% of the time, Earth science literacy maps 9% of the time and from the homepage dlese.org 8% of the time. Educators accounted for 54.4 % of respondents, with high school and middle school teachers at 27.9% and 14.7% respectively. Students represented 28.7% of respondents, with college undergraduates the largest group at 8.8%. High and middle school students were sparsely represented in the survey, with only 9 total responses accounting for 6.6% of the responses. Three librarians responded to the survey, as did 14 pre-service teachers. See Figure 8.

Figure 8.



Distribution of roles of 136 respondents to survey at DLESE

Purpose and success

The most frequent purpose selected was "looking for a resource to teach a specific concept or standard" at 51.5%, followed by fairly equal responses of "looking for material to further my own knowledge on a topic" (16.9%) and "completing a homework assignment" (15.4%). Over all purposes, 47.1 % reported being somewhat successful, and 37.5% reported being very successful. Educator/faculty comprised the majority of the respondents who selected "looking

for a resource to teach a specific concept or standard", with a small number of pre-service teachers (n=9) in the mix. Reports of being "somewhat successful" at this purpose outweighed "very successful" at 57.1 and 33.9% respectively. Students most frequently selected "completing a homework assignment" as their main purpose, and reported being "very successful" 52.9% of the time and "somewhat successful" 29.4% (see Table 4).

Other purposes cited included "to add a resource" and "career day material". Librarians reported "looking for good sites for teachers", "interested in different search portals" and "science Olympiad". Several comments by students referenced working on a specific project, but also noted a confusion about how the site works, e.g. "where do I click" and "it's kind of confusing".

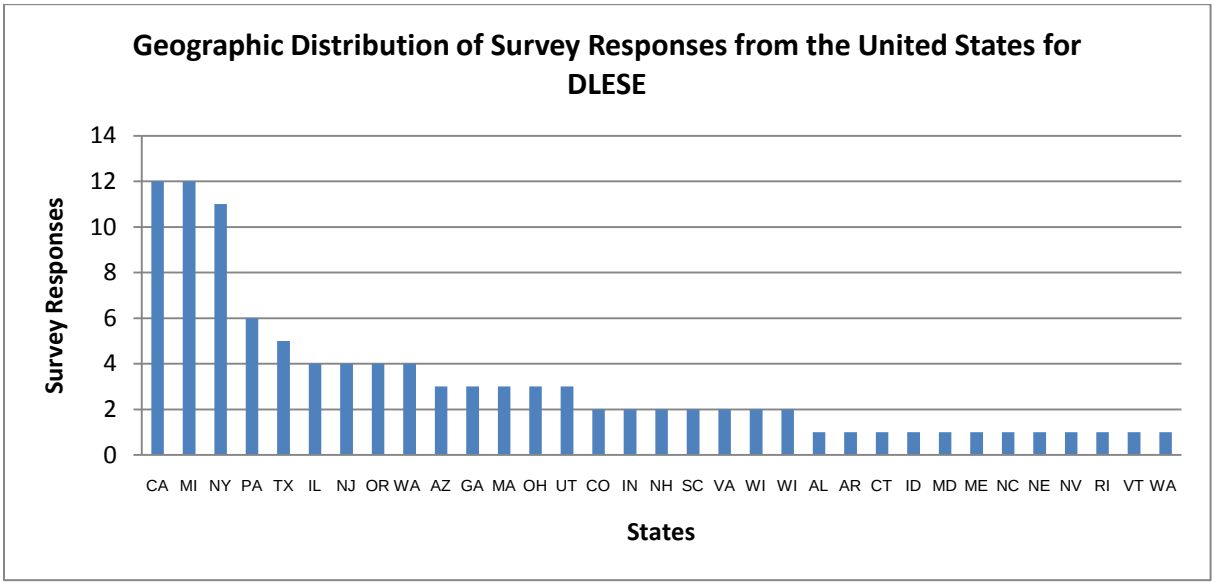
Table 4. Success rates for primary purpose for visiting DLESE for educators and students.

Role	Purpose	Very successful	Somewhat successful	Not at all	Skipped question
Educator	Looking for a resource to teach a specific concept or standard	33.9%	57.1%	3.6%	5.4%
Student	Completing a homework assignment	52.9%	29.4%	5.9%	11.8%

Geographic distribution

DLESE had 136 responses with 37 or 27.2% of participants identifying themselves as coming from countries other than the United States. Of these only 2 were identifiable and included respondents from Germany and China. Of the 102 or 75% of participants providing a zip code, 99 were resolvable against the Google Maps API to determine the origin. The distribution of these zip codes by state is shown in Figure 9. Thirty-three different states were among the resolvable zip codes, with California, Michigan and New York dominating the sample.

Figure 9.

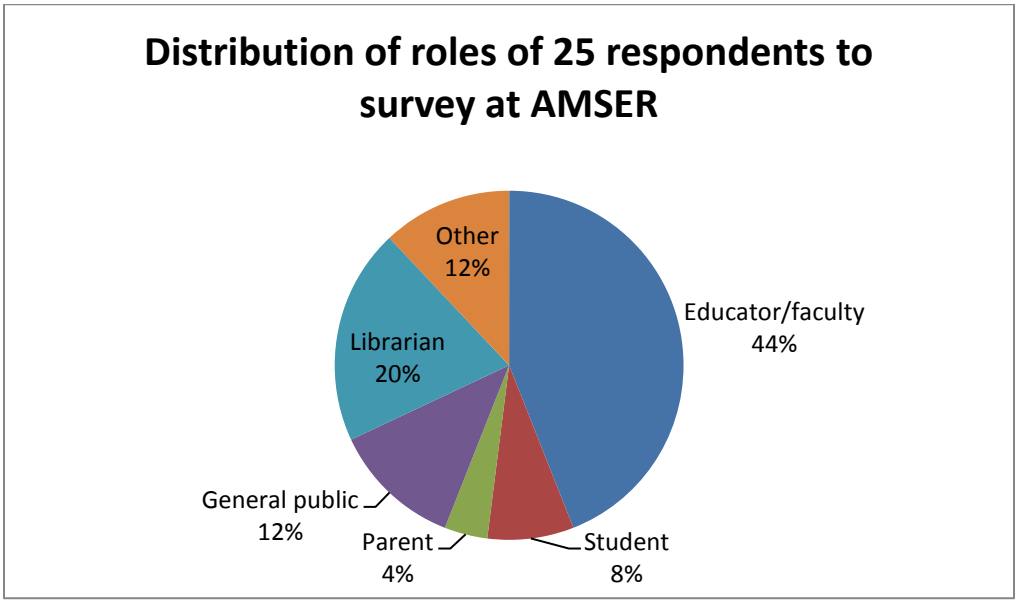

Geographic Distribution of Survey Responses from the United States for DLESE
Survey Responses
14
12
10
8
6
4
2
0
CA MI NY PA TX IL NJ OR WA AZ GA MA OH UT CO IN NH SC VA WI WI AL AR CT ID MD ME NC NE NV RI VT WA
States

AMSER- Applied Math and Science Education Repository

Roles

The AMSER site received 25 surveys during the two-week survey deployment window. Educator/faculty represented the largest role at 44% (n=11), followed by librarians (20% n=5). Students represented 8% of respondents (n=2) (see Figure 10). Educator/faculty were affiliated primarily with college undergraduate education (40%), followed by college graduate education (12%) and community college (8% n=2). All of the five librarian respondents were affiliated with higher education, though two also indicated an affiliation with K-12 as well. Although AMSER's intended audience is for community and technical colleges, clearly those affiliated with 4-year undergraduate education are visiting the site to find materials as well.

Figure 10.



Purpose and success

Respondent purposes at AMSER were fairly evenly distributed across the choices, with "looking for material to further my own knowledge on a topic" the most frequently chosen (n=9) followed by "just browsing" (n=6) and "looking for a resource to teach a specific concept or standard" (n=5). The two student respondents both selected "completing a homework

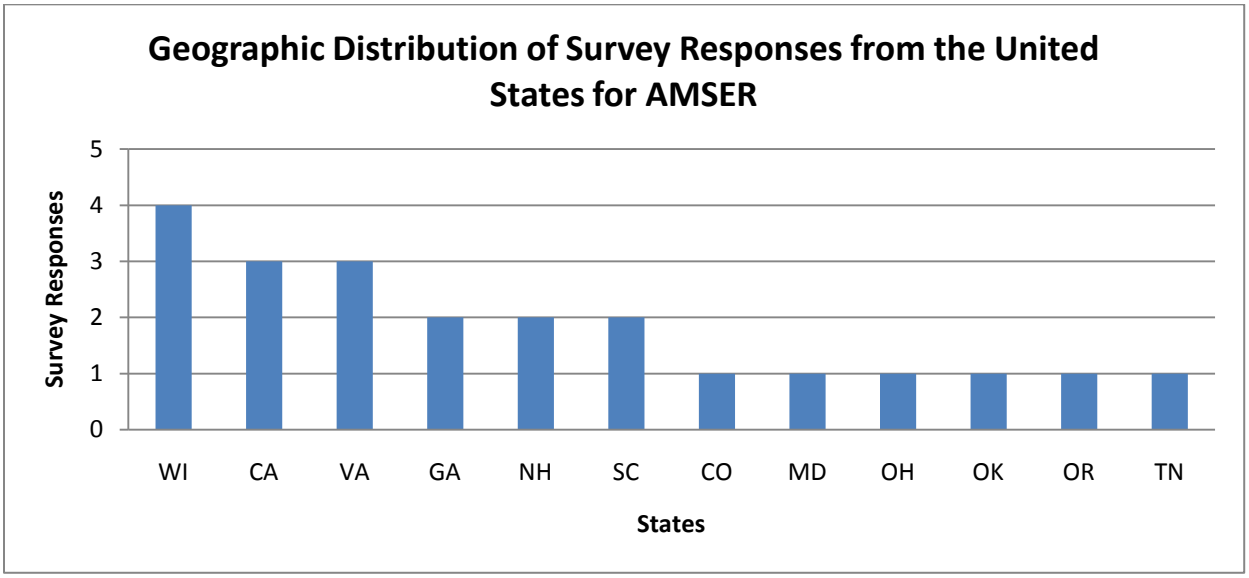
assignment" as their main purpose for visiting AMSER. The two "other" responses were from librarians who both indicated they were "looking for resources to show to students" and they were both working at the college level.

The AMSER respondents were decidedly positive about their success at completing their intended purpose. This site had not a single "not at all" response to the question about success, with 72% responding "very successful". Two additional comments were also quite favorable: "You have a very good set of resources.... well organized, clear descriptors, comprehensive in scope" and "Glad that I found the site".

Geographic distribution

AMSER had 4 or 16% of participants identifying themselves as coming from countries other than the United States but none of these were identifiable as to country of origin. Of the 22 or 88% of participants providing a zip code and all were resolvable against the Google Maps API to determine the origin. The distribution of these zip codes by state is shown in Figure 11. Twelve states were represented in the resolvable data, led by Wisconsin, California and Virginia.

Figure 11.

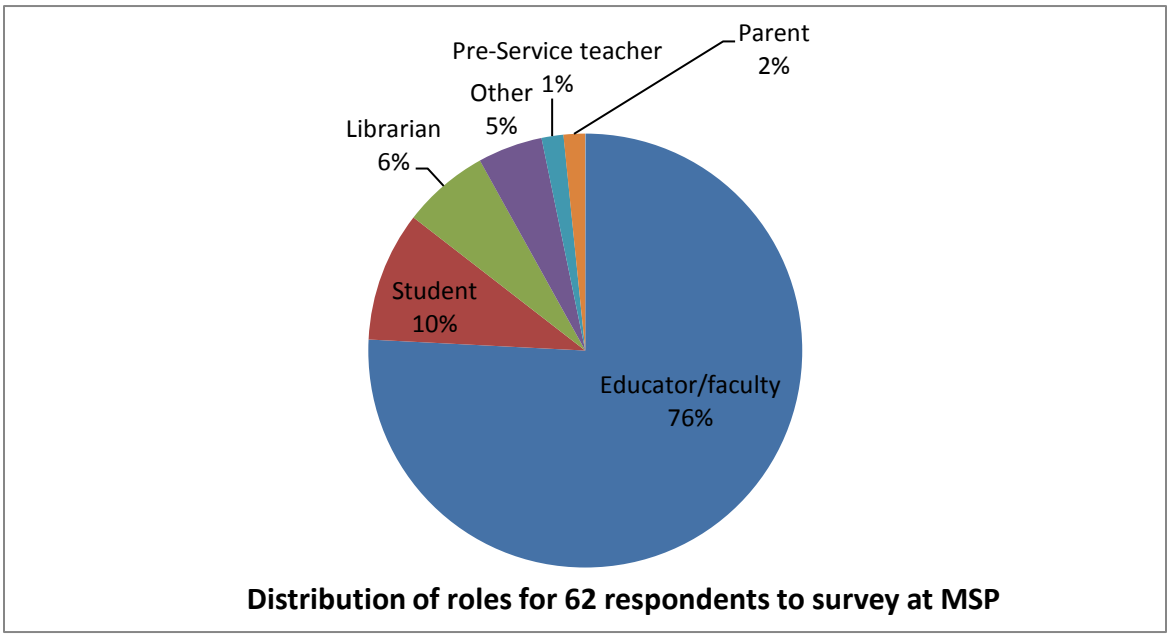


MSP- Middle School Portal

Role

The Middle School Portal received 62 responses to the survey during its two week deployment. Educator/faculty accounted for 75.8% of the respondents, with 69.4% affiliated with middle school. Students comprised 9.7% of responses (n=6) and librarians 6.5% n=4). One pre-service teacher responded to the survey. An affiliation with teacher education was indicated in 12.9% of responses (see Figure 12).

Figure 12.



Distribution of roles for 62 respondents to survey at MSP

Purpose and success

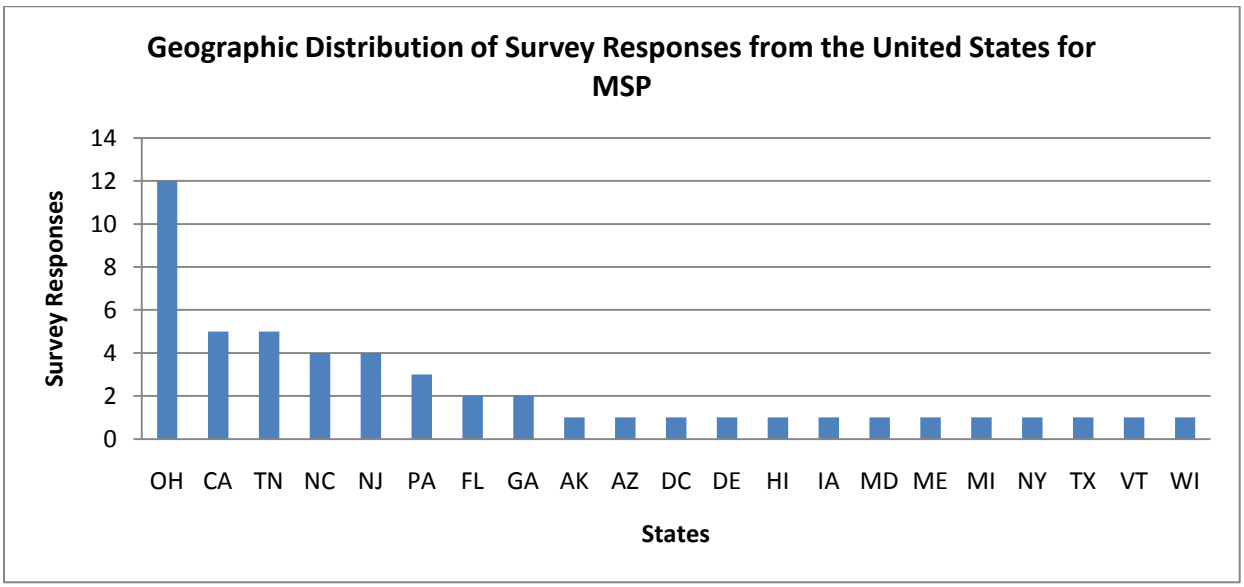
Over all respondents, "other" was the most frequently selected purpose (29%), indicating that the set of choices developed initially for NSDL may not be as relevant for this site's audience. Other purposes that were cited included registering for or seeking information on a webinar, a recommendation from a colleague or teacher, in response to a communication from the site, and "Sharing a link to PBS seeking STEM teacher collaboration". "Just browsing" was the most frequently selected of the provided purposes (25.8%) and "Looking for a resource to teach a specific concept or standard" and "Looking for material to further my own knowledge on a topic" were selected equally at 17.7%.

MSP also enjoyed a very high success rate, as reported by respondents, with only two people selecting “Not at all”. Almost 60% of respondents selected “very successful” and 35.5% were “somewhat successful”. The two not successful visitors provided different reasons for their lack of success. One said that the topic they were looking for when they were “looking for a resource to teach a specific concept or standard” was not addressed in the site, and the other, a librarian provided detailed criticism about the design of the search interface, noting that there are excellent resources and excellent metadata but that they are “marred here by nonfunctional searching”. Balancing this out are numerous other comments offered up with praise, including: “The site is really easy to navigate and loaded with great resources and people! I especially appreciate the free webinars and they are always of high quality! Thank you!” and “What a gem of a site!”.

Geographic distribution

The Middle School Portal had 62 responses with 14 or 22.6% of participants identifying themselves as coming from countries other than the United States, though none these could be determined as to specific country of origin. Of the 50 or 80.6% of participants providing a zip code, including 2 people who indicated that they were from outside the United States, all 50 were resolvable against the Google Maps API to determine the origin. The distribution of these zip codes by state is shown in Figure 13. Twenty-one states were represented in the resolvable data, dominated by Ohio, the home state of the collection builders.

Figure 13.



comPADRE Pathway– Resources for Physics and Astronomy Education

Role

The comPADRE deployment of the survey received 1414 responses across all the participating selected collections. These included The Physics Front, Open Source Physics, Per Central comPADRE, The Nucleus, Statistical and Thermal Physics, Physical Sciences Resource Center, The Physics Source, The Quantum Exchange, Advanced Labs and The Physics Classroom. The survey was available throughout the 2 weeks in all deployment sites except The Physics Classroom which only collected data for 1 day. The limited deployment time for The Physics Classroom website was mainly because of the large traffic on the site, enabling good numbers in 1 day of deployment, and also because The Physics Classroom is used heavily by students and comPADRE did not want to disrupt their learning. Most ComPADRE collections are designed to support educators while The Physics Classroom is a student-centered tutorial and learning resource. Because of these differences, the responses are analyzed separately.

The majority of respondents to the survey at comPADRE sites, excluding The Physics Classroom, were educator/faculty representing 49.8% (n=138) followed by students representing 35%. Of the students, college- undergrad students were the largest group comprising 17%, followed by high school students at 11.9%. The remaining grade level affiliation choices all had some small representation ranging from 0.7%-4.7%. Educators most frequently selected high school as a grade level affiliation at 24.9%, with college- undergraduate next at 17.3% (see Figure 14).

The majority of respondents to the survey at the Physics Classroom were students representing 62.1% (n=706) followed by educator/faculty representing 25.2%. Of the students, high school students were the largest group comprising 41.1%, followed by college- undergraduates at 12.1%. The remaining grade level affiliation choices all had some small representation ranging from 0.4% to 5.2%. Educators also most frequently selected high school as a grade level affiliation at 19.9% (see Figure 15).

Figure 14. Distribution of roles for 277 respondents to survey at comPADRE, excluding The Physics Classroom

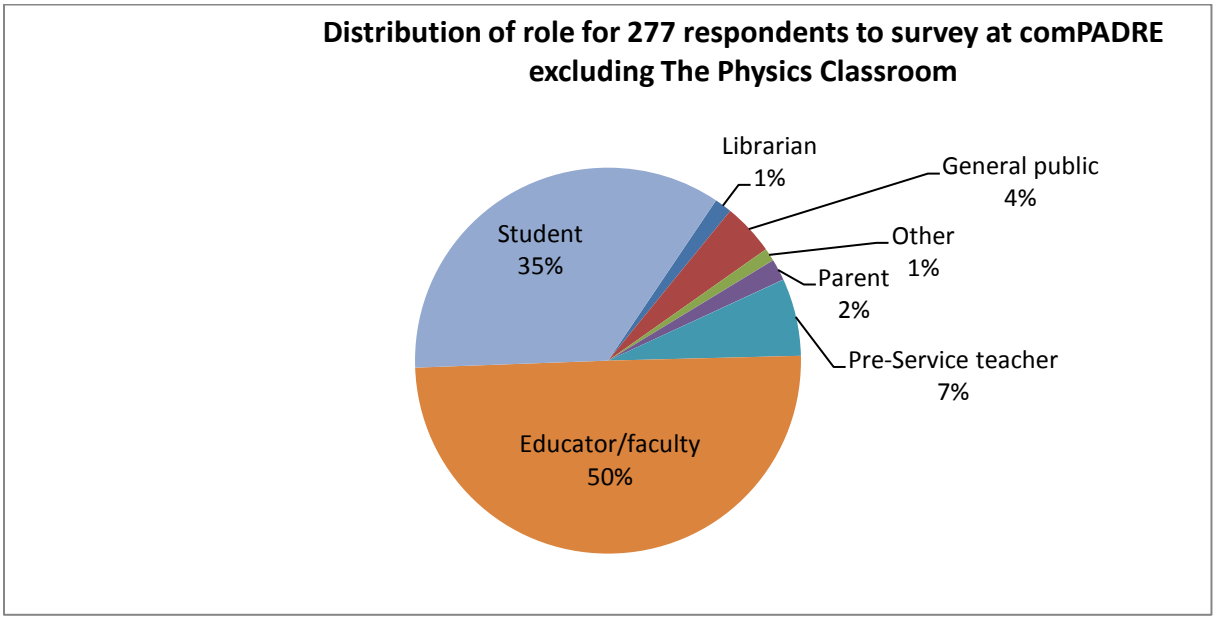
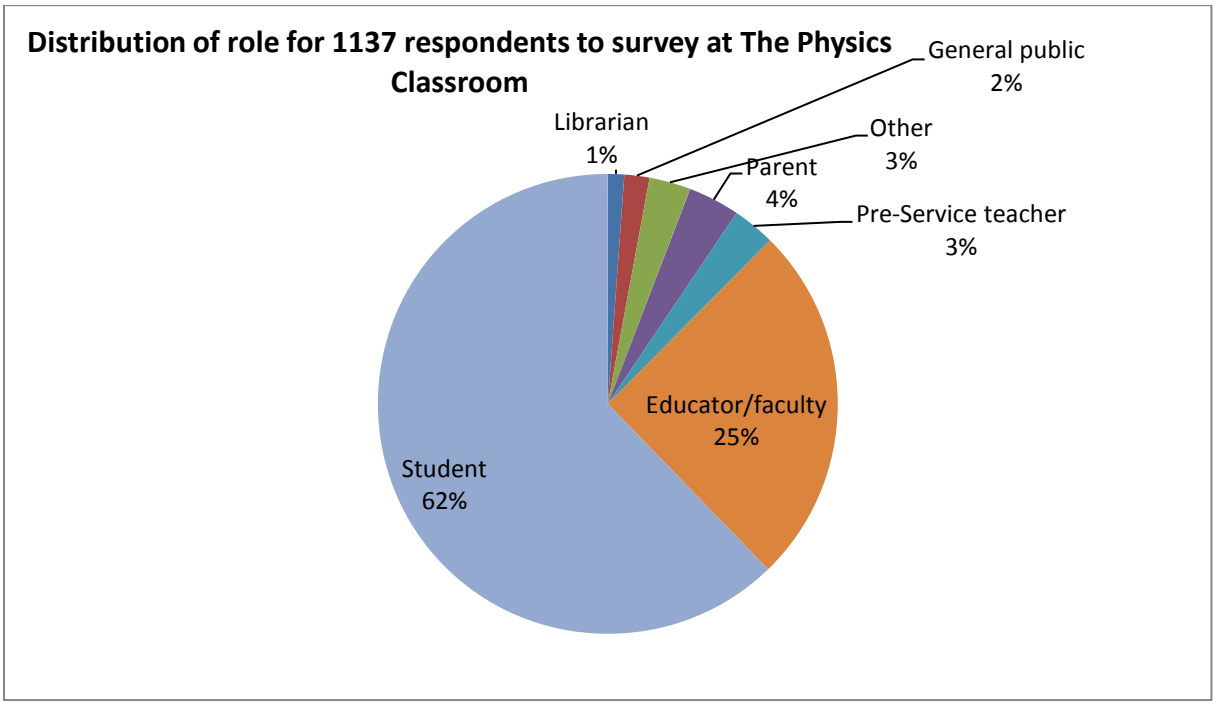


Figure 15. Distribution of roles for 1137 respondents to survey at The Physics Classroom



Purpose and success

Respondents at sites other than The Physics Classroom primarily selected "looking for a resource to teach a specific concept or standard" (39.7%) or "looking for material to further my own knowledge on a topic" (26%), followed by "completing a homework assignment" (13.4%). The choice "other "was selected more frequently than the remaining choices provided by the survey. Overall, respondents were "somewhat successful" 55.5% of the time and "very successful" 40% of the time in "looking for a resource to teach a specific concept or standard". Success for "looking for material to further my own knowledge on a topic" was reported to be "very successful" 51.4% of the time and "somewhat successful" 38.9% of the time. Success for "completing a homework assignment" was reported to be "somewhat successful" 48.6% of the time and "very successful" 35.1% of the time. Educators primarily selected "Looking for a resource to teach a specific concept or standard (63.8%) while students typically selected "Looking for material to further my own knowledge on a topic" (38.1%) or "Completing a homework assignment" (37.1%).

Table 5. Success rates (percent of group by purpose) for primary purpose for visiting comPADRE sites excluding the Physics Classroom for educators and students

Role	Purpose	Very successful	Somewhat successful	Not at all	Skipped question
Educator	Looking for a resource to teach a specific concept or standard	39.8	58	n/a	2.3
Student	Looking for material to further my own knowledge on a topic	51.4	35.1	10.8	2.7
Student	Completing a homework assignment	33.3	50	13.9	2.8

Respondents at the Physics Classroom primarily selected “completing a homework assignment” (32.2%) or “looking for a resource to teach a specific concept or standard” (28.6%), followed by “looking for material to further my own knowledge on a topic” (25.7%). The choice “other “was selected more frequently than the remaining choices provided by the survey. Overall, respondents were “very successful” 49.5% of the time and “somewhat successful” 43.4% of the time in “completing a homework assignment”. Success for “looking for a resource to teach a specific concept or standard” was reported to be “very successful” 69.2% of the time and “somewhat successful” 27.1% of the time. Not surprisingly, among students the most common purpose selected was “completing a homework assignment” (48%), and educators predominately selected “looking for a resource to teach a specific concept or standard” (76.7%). So, although students represented the largest group of respondents, educators reported being “very successful” at their primary purpose more frequently than students did.

Table 6. Success rates (percent of group by purpose) for primary purpose for visiting the Physics Classroom for educators and students

Role	Purpose	Very successful	Somewhat successful	Not at all	Skipped question
Educator	Looking for a resource to teach a specific concept or standard	78.6	20	0.9	0.5
Student	Completing a homework assignment	50.7	42.8	4.7	1.8

A wide range of other purposes were reported, but a few themes emerged, including studying for an exam (including a class test as well as standardized test), looking for science Olympiad/science fair material, exploring the site at a teacher’s direction (not all positively stated), and educators looking to supplement classroom lectures, develop assessments, and find additional problems for students to solve.

A few specific comments from students and educators follow:

“ This site explains things much better than my book does! I used this as my study guide all last semester and it really brought my grade up. It's very easy to understand. Thank you soo much!”

“Great resource for conceptualizing the basics! Much better than the resources I paid for designed for GAMSAT.”

“LOVE your site. I'm in my 3rd year of teaching as a career changer from original job in Electrical/Software Engineering. I'm the only physics teacher in my district and I was left with absolutely nothing including a curriculum map with which to start my program. Now I'm developing a community college class to teach at the high school on a day-by-day basis. comPADRE a huge help.”

A few respondents offered some very specific constructive suggestions:

“*Get more REU listings for the summer from more schools. Tell all schools to post their REU programs here. Also make this a one stop shop place for all graduate school information etc. Make links to all professional science organizations.”*

“It would be nice for you to have an answer key for teachers only on your curriculum corner to save time of answering all the questions for grading. It makes it time consuming. I know you have this site to help your students and I like the problems and easy reading but I wish that you could set up a teacher site that had a key. Filling out the papers before class is time consuming so I do not use them as much as I like. The funds you received were well used. I can see this site even helping College students with the first semester Physics. I teach first semester Physics dual credit with a local college and I can see where the tutorial really could help some students.”

The few “not successful” respondents appeared to have some very specific searches or goal, such as the student looking for the relationship between a moving charge and an electric field. An educator commented “No practice problems on the web site”. Other reasons for not being successful include a couple of people looking for opportunities for international students and criticism of the surveys intrusion on their experience.

Geographic distribution

Excluding The Physics Classroom, ComPADRE had 277 responses with 139 or 50.2% of participants coming from countries other than the United States. Of these 18 were resolvable to 11 different specific Non US countries, the distribution of which is depicted in Figure 16. Of the 151 or 54.5% of participants providing a zip code, including 13 who indicated that they were from outside the United States, 147 were resolvable against the Google Maps API. Of the zip codes provided 129 or 46.6% of comPADRE survey participants, not including The Physics Classroom survey participants, had resolvable zip codes from the United States. The distribution of these resolvable US zip codes by state is shown in Figure 17. 33 states were represented in the resolvable data, with the majority of respondents from Virginia.

Figure 16.

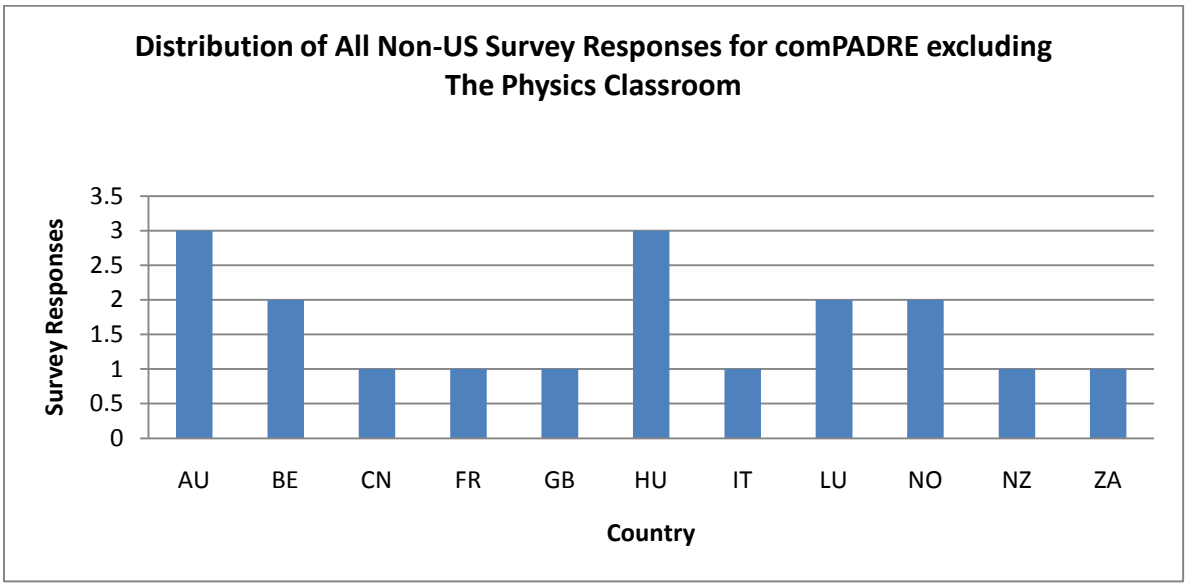
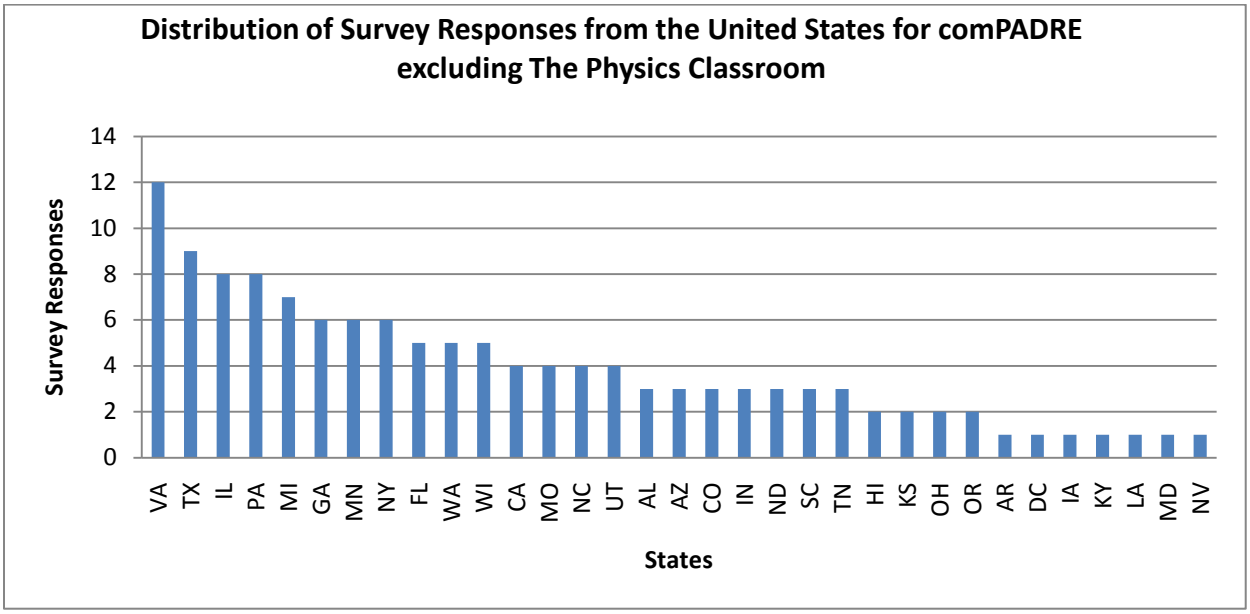


Figure 17.



The Physics Classroom had 1137 responses with 409 or 36% of participants coming from countries other than the United States. Of these 80 were resolvable to 22 different specific Non US countries, the distribution of which is depicted in Figure 18. Of the 749 or 65.9% of participants providing a zip code, including 24 who indicated that they were from outside the United States, 726 were resolvable against the Google Maps API. Of the zip codes provided 646 or 56.8% of The Physics Classroom survey participants had resolvable zip codes from the United States. The distribution of these resolvable US zip codes by state is shown in Figure 19. 39 states were represented in the resolvable data, with the majority of respondents from Illinois.

Figure 18

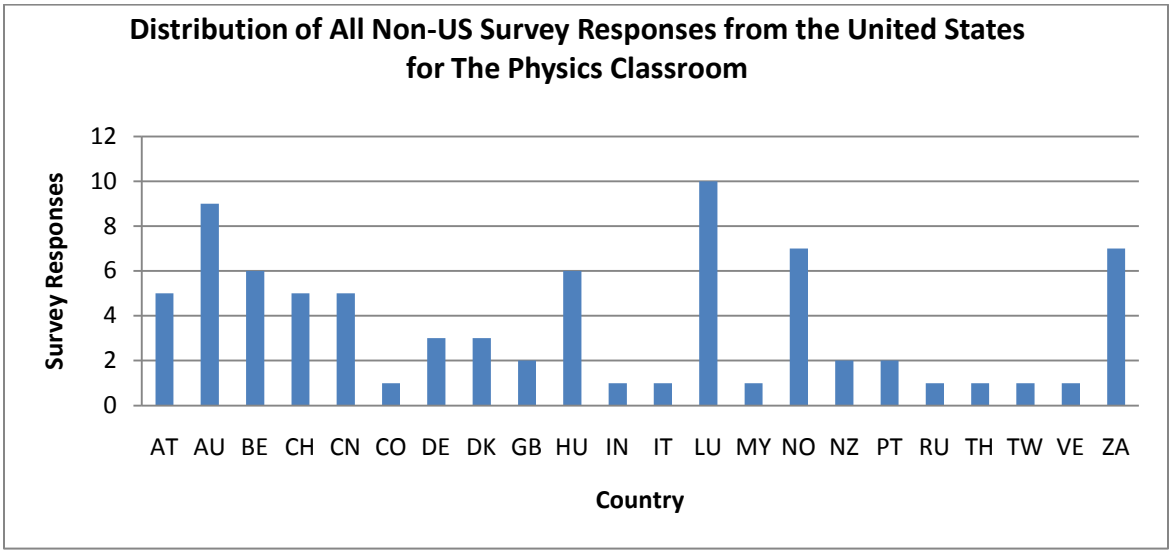
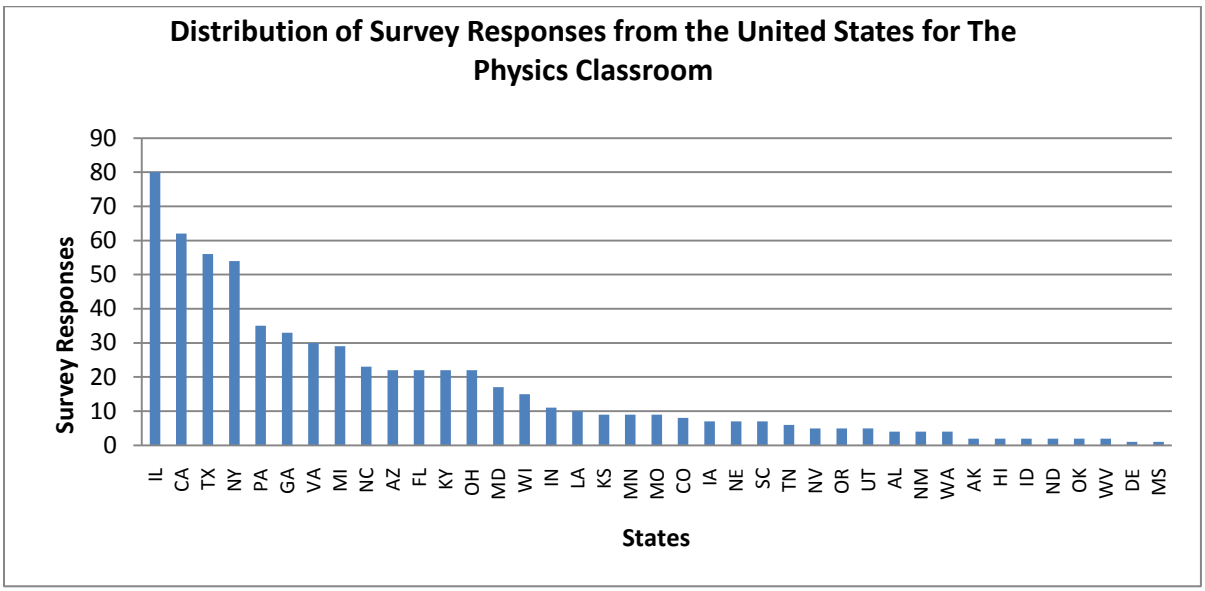


Figure 19



Summary

The NSDL User pop-up survey was successfully deployed in five sites for the two week period. This was the first effort to organize a synchronous data collection across multiple sites, and distribute code to Pathways to support this effort. The data were successfully collected at all sites and transferred to a single database on NSDL servers, allowing for analysis over the

aggregate as well as individual sites. Some differences in ability to count visitor sessions that filtered to include only sessions longer than the 45 second delay in the survey "popping up" resulted in an inability to compare response rate across all sites. NSDL.org's response rate was lower this year (10.6%) compared to the 2010 deployment response rate of 15.7%, and no data exists to compare between years for the other sites.

The overall percent distribution of student and educator respondents to the NSDL survey remained fairly consistent between the two years though the grade level affiliation within each group shifted (Table 7.). College undergraduate and graduate faculty declined in 2011, while K-12 users increased. The grade level "teacher education" was not available in 2010, but it accounted for 16.4% of responses in 2011 when added to the list of choices. The proportion of students affiliated with higher education also declined in 2011, with a corresponding increase in K-12 respondents overall. Hence, even though college undergraduates comprised the largest single group of student respondents, this was still a small decline from the previous year, and a smaller population when K-12 students are considered as a group as opposed to discriminating by grade level ranges.

Table 7. Comparison of grade level distribution for educators and student in data collected in the spring of 2010 and 2011.

Role	**Grade level**	**% in 2010**	**% in 2011**
Educator		**55.4**	**50.5**
	High school	41.6	38.3
	Middle school	33.6	40.1
	Elementary	16.3	28.7
	College- undergrad	20.8	11.1
	College- grad	14.2	9.3
	Teacher education	na	16.4
Student		**23.0**	**22.9**
	High school	23.3	22.13
	Middle school	14.2	20.5
	Elementary	9.2	14.6
	College- undergrad	33.3	29.5
	College- grad	26.6	16.4

Overall success rates at NSDL.org remained solid between the two years sampled with a slight gain in "very successful" in the combined data of all users and purposes. Table 8 depicts the data from 2010 and 2011 for each of four purposes, for all users combined.

The most frequently selected purpose in both years was "Looking for a resource to teach a specific concept or standard", overall and for educators as a group. " Just browsing" and "Looking for material to further my own knowledge on a topic" swapped ranks of second and third between years, and "Completing a homework assignment" was the fourth most frequently selected purpose in both years. "Completing a homework assignment" was however, the most frequent purpose selected by students in both years.

Table 8. Percent success reported for all users combined and by purpose, for 2010 and 2011 at NSDL.org.

		2010`	2011
All users and purposes combined	Very successful Somewhat successful	42.3 41.9	46.9 39.4
Looking for a resource to teach a specific concept or standard	Very successful Somewhat successful	45.8 37.3	47.9 37.0
Just browsing	Very successful Somewhat successful	36.7 50.6	48.8 39.5
Looking for material to further my own knowledge on a topic	Very successful Somewhat successful	39.4 41.5	31.6 57.0
Completing a homework assignment	Very successful Somewhat successful	42.0 47.8	43.3 43.3

Respondents to the survey at DLESE reported overall positive success rates, but "somewhat successful "outweighed "very successful" for educators, and this is an area that might warrant some attention. Despite comments from several students that the search interface was confusing, they reported a higher success rate at their primary purpose. Attention to this may increase the representation of student users of DLESE in the future.

AMSER received few responses, and those that did were primarily from higher ed undergraduate and graduate faculty. This is interesting as the collections are geared toward

community college and technical schools. With such a small sample it is difficult to know why so few community college educators responded to the survey, but it does appear that the site serves a wider audience and enjoys a high rate of success by its users.

MSP clearly serves the audience it intends to, middle school educators, quite well. An interesting aspect of their data was that “other” was the most frequently selected purpose. A review of the default choices may be in order for deployment at this site in subsequent years, to more adequately capture user purpose in a structured way.

comPADRE sites represent a large sample over a number of different sites. The analysis here looks at the data collectively and not by sub- collection. It may be of interest to review the data here by site in order to discern any differences between the various collections. In particular educators enjoyed a high rate of success at these sites, and comPADRE’s user base appears consistent with their intended audiences.

Pre-service teachers had a low level representation across all the sites surveyed. This may be due simply to a smaller available population of potential users. Although the success rate for this group was high, sites might consider ways to increase the awareness and use of the NSDL and its affiliates in this population which plays a critical role moving forward in educational reform.

Appendix A: NSDL “pop-up” survey questions.

1. Please indicate your zip code:
2. Please identify yourself as primarily:
    - Educator/faculty
    - Student
    - Parent
    - Pre-service teacher
    - 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
        - Community college
        - Teacher education
        - 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?