

Academic Libraries Survey (ALS)

Website: <http://nces.ed.gov/surveys/libraries/academic.asp>

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1. OVERVIEW

The Academic Libraries Survey (ALS) was designed to provide concise information on library resources, services, and expenditures for all academic libraries in the 50 states, the District of Columbia, and the outlying areas. The ALS was conducted by NCES on a 3-year cycle between 1966 and 1988, within the framework of the Higher Education General Information System (HEGIS). Between 1988 and 1998, the ALS was a component of the Integrated Postsecondary Education Data System (IPEDS) (see the IPEDS chapter for more details on IPEDS) and was collected on a 2-year cycle. Between 2000 and 2012, the Academic Libraries Survey was conducted independently of IPEDS and remained on a 2-year cycle. Since 2014, it was reintegrated back into the IPEDS collection and is collected annually from degree-granting postsecondary institutions.

ALS collected data biennially from approximately 3,700 degree-granting postsecondary institutions in order to provide an overview of academic libraries nationwide and by state. The 1996 ALS also surveyed libraries in nonaccredited institutions that had a program of 4 years or more. Because so few of these libraries responded to ALS, their data were not published. Beginning with the 1998 ALS, the major distinction has been whether or not the library is part of a postsecondary institution that is eligible for Title IV funds.

Although ALS was a component of IPEDS from 1988 through 1998, from 2000 to 2012, ALS began collecting data independently of the IPEDS data collection. However, data from ALS could still be linked to IPEDS data using the institution's UNITID number. IPEDS served as the frame, or universe, of degree-granting postsecondary institutions from which eligible institutions were selected for the ALS administration. Beginning in 2014, ALS was reintegrated back into the IPEDS collection.

Purpose

To periodically collect and disseminate descriptive data on all postsecondary academic libraries in the United States, the District of Columbia, and the outlying areas, for use in planning, evaluation, and policymaking.

Components

From 2000 to 2012, there was a single component to the Academic Libraries Survey and it was completed by a designated respondent at the library. From 1988 to 1998 and beginning in 2014, when ALS is a part of IPEDS, an appointed IPEDS representative collects the information from academic librarians and submits it to NCES. Currently, the data collection agent is the U. S. Department of Education.

Academic Libraries Survey. An academic library is the library associated with a degree-granting institution of higher education. Academic libraries are identified by the postsecondary institution of which they are a part (see *Key Concepts* below for further detail). Through 1996, ALS distinguished between libraries in postsecondary institutions accredited by agencies recognized by the Secretary of the U.S. Department of Education and libraries in nonaccredited institutions that had

BIENNIAL SURVEY OF THE UNIVERSE OF LIBRARIES IN POSTSECONDARY EDUCATION INSTITUTIONS

ALS collected data on:

- Library staffing
- Operating expenditures
- Total volumes
- Circulation, loan, and reference transactions
- Electronic services
- Gate count

programs of 4 or more years. Starting with the 1998 collection, the major distinction has been whether or not the library is part of a postsecondary institution that is eligible for Title IV funds.

Between 2000 and 2012, data were collected on the number of libraries, branches, and service outlets; full-time-equivalent (FTE) library staff by position; operating expenditures by purpose, including salaries and fringe benefits; total volumes held at the end of the fiscal year; circulation transactions, interlibrary loan transactions, and information services for the fiscal year; hours open, gate count, and reference transactions per typical week; and since 1996, the availability of electronic services, such as electronic catalogs of the library's holdings, electronic full-text periodicals, internet access and instruction on use, library reference services by e-mail, electronic document delivery to patrons' account addresses, computers and software for patron use, scanning equipment for patron use, and services to the institution's distance education students. In 2004, a new set of questions on "information literacy" was added to the questionnaire. In 2010, reference transactions was broken out into "in-person" and "virtual" and "over 20 minutes" and "under 20 minutes." Also, a new set of yes/no questions about "virtual reference" was added to the questionnaire.

Periodicity

Annual from 2014; biennial in even-numbered years from 1990 to 2012; triennial from 1966 through 1988.

2. USES OF DATA

Effective planning for the development and use of library resources demands the availability of valid and reliable statistics on academic libraries. ALS provides a wealth of information on academic libraries. These data are used by federal program staff to address various policy issues, by state policymakers for planning and comparative analysis, and by institutional staff for planning and peer analysis. Specific uses are listed below:

- Congress uses ALS data to assess the impact of library grants programs, the need for revisions to existing legislation, and the allocation of funds.
- Federal agencies that administer library grants for collections development, resource sharing, and networking activities require ALS data for their evaluation of the condition of academic libraries.
- State education agencies use ALS data to make comparisons at the national, regional, and state levels.
- Accreditation review programs for academic institutions require current library statistical data in order to evaluate postsecondary education institutions, establish standards, and modify comparative norms for assessing the quality of programs.
- Library administrators, academic managers, and national postsecondary education policy planners need current data on new electronic technologies to assess the impact of rapid technological change on the collections, budgets, and staffs of academic libraries. College librarians and administrators need these data to develop plans for the most effective use of local, state, and federal funds. Staff data are input to supply/demand models for professional and paraprofessional librarians.
- Library associations—such as the American Library Association, the Association of Research Libraries, and the Association of College and Research Libraries—use ALS data to determine the general status of the profession. Other research organizations use the data for studies of libraries.
- Program staff in the Institute of Education Sciences of the U.S. Department of Education use ALS data for administering their library grants program, evaluating existing programs, and preparing documentation for congressional budget hearings and inquiries.

3. KEY CONCEPTS

Some of the key concepts and terms in ALS are defined below. For additional terms, refer to *Documentation for the Academic Library Survey (ALS) Public Use Data File: 2008* (Phan, Hardesty, and Sheckells, 2009).

Academic Library. An entity in a postsecondary institution that provides an organized collection of printed or other materials, or a combination thereof; a staff trained to provide and interpret such materials as required to meet the informational, cultural, recreational, or educational needs of the clientele; an established schedule in which services of the staff are available to the clientele; and the physical facilities necessary to support such a collection, staff, and schedule. This definition includes libraries that are part of learning resource centers.

Branch Library. An auxiliary library service outlet with quarters separate from the central library of an institution. A branch library has a basic collection of books and other materials, a regular staffing level, and an established schedule. Branch libraries are administered either by the central library, as in the case of some libraries (such as law or medical libraries), or through the administrative structure of other units within the university. Departmental study/reading rooms are not included. Libraries on branch campuses that have separate NCES identification numbers are reported as separate libraries.

Carnegie Classification Code. Started in 1970 by the Carnegie Commission on Higher Education, the Carnegie Classification Code has been the leading framework for recognizing and describing institutional diversity in U.S. higher education for the past 4 decades. The 2000 Carnegie Classification has been used for the ALS since 2000, with 1994 and 1996 ALS data collections having used the 1994 Carnegie Classification. Since 2008 the ALS has utilized the 2005 Carnegie classification. Reports prior to 2008 used the 2000 Carnegie classification.

Child Institution. A “child” institution does not respond directly to the ALS or IPEDS data collections. The data for such an institution are aggregated with and reported by its “parent” institution.

Circulation Transaction. Includes all items lent from the general collection and from the reserve collection for use generally (although not always) outside the library. Includes both activities with initial charges (either manual or electronic) and renewals, each of which is reported as a circulation transaction.

Gate Count. The total number of persons physically entering the library in a typical week. A single person can be counted more than once.

Interlibrary Loan. A transaction in which library materials, or copies of the materials, are made available by one library to another upon request. Loans include providing materials and receiving materials. Libraries involved in these interlibrary loans cannot be under the same administration or on the same campus.

Parent Institution. An institution that reports data for another institution (a “child”) aggregated with its own data.

Reference Transaction. These are information contacts that involve the knowledge, use, recommendation, interpretation, or instruction in the use of one or more information sources by a member of the library staff. Information sources may include printed (e.g., book

volumes) and nonprinted (e.g., microforms) materials and machine-readable databases (e.g., those on CD-ROM). The transaction may include providing direction to services outside the library.

Title IV Institution. An institution that has a written agreement with the Secretary of Education that allows the institution to participate in any of the Title IV federal student financial assistance programs (other than the State Student Incentive Grant (SSIG) and the National Early Intervention Scholarship and Partnership (NEISP) programs).

4. SURVEY DESIGN

Target Population

The libraries of all institutions in the 50 states, the District of Columbia, and the outlying areas that have as their primary purpose the provision of postsecondary education. Branch campuses of U.S. institutions located in foreign countries are excluded. Through 1996, ALS distinguished between libraries in postsecondary institutions accredited by agencies recognized by the Secretary of the U.S. Department of Education and libraries in nonaccredited institutions that had programs of 4 or more years. Starting with the 1998 collection, the major distinction has been whether or not the library is part of a postsecondary institution that is eligible for Title IV funds.

Sample Design

ALS surveys the universe of postsecondary institutions.

Data Collection and Processing

For the 1990, 1992, 1994, 1996, and 1998 data collections, state IPEDS Data coordinators collected, edited, and submitted ALS data to the U.S. Census Bureau, using the software package Input and Data Editing for Academic Library Statistics (IDEALS). An academic librarian in the state assisted with the collection and submission of the data.

When the ALS transitioned back into IPEDS in 2014, NCES became responsible for survey administration and data processing and dissemination. IPEDS keyholders are responsible for collecting ALS data from librarians and submitting it to NCES. Between 2000 and 2012, ALS was not a component of the IPEDS survey system. The 2000 through 2012 ALS surveys were web collections. In 2010 and 2012, the web application included a user guide, a tutorial explaining features and operation, the survey instrument, and an edit check tool. The U.S. Census Bureau was the collection agent. State-level library representatives were available to promote responses

from librarians and to assist in problem resolution when anomalies are discovered in responses.

Reference dates. Most ALS data are reported for the most recently completed fiscal year, which generally ends before October 1 of the survey year. Information on staff and services per typical week are collected for a single point in time during the fall of the survey year.

Data collection. In the 2000 through 2012 ALS data collections, library respondents submitted data directly to the Census Bureau through the Web. For the 2008 web-based data collection, state-level library representatives were available to promote prompt responses from librarians. The web-based survey is the latest in a number of steps to improve ALS collection.

In July 1990, NCES initiated an ALS improvement project with the assistance of the National Commission on Libraries and Information Science (NCLIS) and the American Library Association's Office of Research and Statistics (ALA-ORS). The project identified an academic librarian in each state to work with the IPEDS coordinators in submitting their library data. During the 1990s, many of these library representatives took the major responsibility for collecting data in their state. Others were available to assist in problem resolution when anomalies were discovered in completed questionnaires.

The ALS improvement project also led to the development of the microcomputer software package IDEALS, which was used by states in reporting their academic library data from 1990 through 1998. Along with the software, NCES provided state IPEDS Data coordinators with a list of instructions explaining precisely how responses were to be developed for each ALS item. Academic librarians within each state completed hard-copy forms, as they had previously, and returned them to the state's library representative or IPEDS coordinator. States were given the option of submitting the paper forms, but were encouraged to enter the data into IDEALS and submit the data on diskette to the Census Bureau; a majority of states elected the diskette option.

ALS was mailed to postsecondary institutions during the summer of the survey year, with returns requested during the fall. Any survey returns from institutions that did not have an academic library were declared to be out of scope, as were institutions that did not have their own library but shared one with other institutions.

Editing. The web-based data collection application features internal edit checks. An edit check tool alerts the respondent to questionable data via interactive "edit check warnings" during the data entry process and

through edit check reports that can be viewed on screen or printed. The edit check program enables the respondent to submit edited data to NCES which usually required little or no follow-up for data problems. Over the years, ALS has made use of seven types of edits: summations, relational edit checks, range checks, current year/prior year comparisons, ratios, item comparison, and missing or blank items.

After responses are received, the U.S. Census Bureau reviews the data and contacts respondents with questionable data to request verification or correction of that data. Data records are then aggregated into preliminary draft tables, which are reviewed by NCES and the U.S. Census Bureau for data quality issues. Once all edits have been performed and all corrections have been made, the data undergo imputation to compensate for nonresponse (see below).

Estimation Methods

Imputation is used in ALS to compensate for nonresponse. In 2014, when ALS was reintegrated into IPEDS, the imputation procedures changed. In 1994, the procedures were changed to use data from the previous survey, if available, and to only use imputation group means (see below) if prior-year data were not available. Before 1994, only imputation group medians were used.

Imputation. ALS imputation is based on the response in each part of the survey. Most parts go through either total or partial imputation procedures, except for the following items: (1) Number of branch and independent libraries; (2) Library staff information – contributed services staff; and (3) Library operating expenditures – employee fringe benefits. These items are imputed only if reported prior-year data are available (contributed services staff and employee fringe benefits apply to only a few institutions). Items (1) Electronic Services, and (2) Information Literacy do not go through imputation.

The imputation methods use either prior-year data or current-year imputation group means. The procedures are slightly different depending on whether an institution is totally nonresponding or partially nonresponding in the current year. If prior-year data are available, the imputation procedure either carries forward the prior-year data or carries forward the prior-year data multiplied by a growth factor. If prior-year data are not available, the imputation procedure uses the current-year imputation group medians or means as the imputed value.

Medians/means and ratios are calculated for each of 11 non-mutually exclusive imputation groups based on 27 imputation cells that were formed by the various

combinations of FTE and institution sector. The use of FTE to determine imputation cells was not employed until 2002. In 1998 and 2000, the strata were based upon the highest level of degree (doctor's, master's, bachelor's, and associate's) and control and size of institution. The four control/size imputation categories were (1) public, less than median number of degrees for institutions in that category; (2) public, equal to or greater than the median; (3) private, less than the median; and (4) private, equal to or greater than the median.

After imputation, if a total was missing or known to need adjustment, then the total was readjusted to equal the sum of its detail items.

Using a ratio adjustment to prior-year data represented a change from the imputation procedures followed in cycles prior to 1996, and may have resulted in some small differences in estimates. While checks indicate that the effect of the change was not large, caution should be exercised in making comparisons with pre-1996 or earlier reports. Using FTE to determine imputation cells and using medians instead of means for imputation also represents a change from the procedures followed in cycles prior to 2002. While research indicates that the effect of the change in imputation procedure was not large, caution should be exercised in making comparisons with reports from 2000 or earlier.

Recent Changes

Before 2000, ALS was a component of IPEDS; the state IPEDS Data coordinators collected, edited, and submitted ALS data to the Census Bureau, using the software package IDEALS. From 2000 to 2012, ALS data was collected over the Internet via a web-based reporting system, with the Census Bureau as the collection agent. Beginning in 2014, ALS was reintegrated back into IPEDS and was collected via the IPEDS web-based reporting system, managed by the U.S. Department of Education.

Several changes were made to the survey instrument in 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, and 2012. These are summarized below.

In the 1996 instrument, the data items in part E (Library Services) were expanded to request separate reporting for returnable and nonreturnable, as well as totals. In addition, a new section, part G, was added to collect information about access to electronic services, both on and off campus.

In 1998, a substantial number of changes were made to the ALS survey instrument, especially in the collections and expenditures sections. These changes reflect the

extensive changes in library services that occurred with regard to the development of electronic media. The definition of a library was not changed, but was moved to the cover page and reformatted as a checklist. Other substantial changes were made to the Library Services section (parts E and F), the Library Collections section (part D), the Library Expenditures section (part C), and the Electronic Services section (part G).

In 2000, a new set of questions on “consortial services” was added to the questionnaire. In 2002, several questions were dropped and one was added. In 2004, a number of items pertaining to “information literacy” were added to the questionnaire. The 2006 through 2012 data collections did not include any major changes to the questionnaire with the exception of “reference sources per typical week” being changed to “total information services to individuals” in 2010. To assist data users in managing the variable changes over time, crosswalks between current-year and previous-year surveys are available in the file documentation materials of many of the surveys.

In 2012, several questions were removed from the survey. Current serial titles and electronic reference sources and aggregation services were removed from the library collection section. The information services to individuals questions were removed from the library services section. The five information literacy section questions were replaced with two questions involving student learning/student success outcomes. Also for the 2012 web-based data collection, state/jurisdiction-level library representatives were available to provide prompt responses from librarians and to assist in problem resolution when anomalies were discovered in responses from the academic librarians. For more information about the 2012 ALS, refer to <http://nces.ed.gov/surveys/libraries/>.

In 2014, ALS was integrated into the IPEDS data collection and the survey became a mandatory, annual survey for all degree-granting Title IV institutions. Only institutions with library expenses equal to or greater than \$100,000 were required to report additional details about their expenses to IPEDS. Questions related to library staff were moved to the IPEDS Human Resources component. Many questions from the 2012 ALS collections and services sections were removed or revised. For a list of revisions, see the 2014–15 IPEDS archived changes at <http://nces.ed.gov/ipeds/InsidePages/ArchivedChanges>.

Future Plans

The National Center for Education Statistics will continue to evaluate the potential for changes to the ALS survey and revise as-needed to reflect changes that

have occurred in the services, collections, expenditure accounting, and staffing of academic libraries.

5. DATA QUALITY AND COMPARABILITY

NCES makes every effort to achieve high data quality. Through a web collection that includes built-in edit checks, it hopes to improve the quality of ALS data. Users are cautioned about limitations in the analysis of ALS data by state or by level and control of institution. Since nonresponse varies by state, the reliability of state estimates and comparisons is affected. Special caution should be exercised when using data where the nonresponse rate is 15 percent or greater. The procedure of using medians instead of means for imputation also represents a change from past survey cycles, and while research indicates that the effect of the change in imputation procedure is not large, caution should be exercised in making comparisons with 2000 or earlier reports. See below for more information on the types of errors that affect data quality and comparability.

Between 2000 and 2012, the ALS collected data independent from the IPEDS data collection; however, data from the ALS could still be linked to IPEDS data using the institution's unique unit identification number (UNITID). IPEDS serves as the frame, or universe, of degree-granting postsecondary institutions from which eligible institutions are selected for the current ALS administration.

Sampling Error

Because ALS is a universe survey, there is no sampling error.

Nonsampling Error

Coverage error. A comprehensive evaluation of the coverage of ALS found that the quality of institutional coverage was excellent (a coverage gap of only 1 to 3 percent) when compared to other institutional listings directly related to the academic libraries industry; however, questions remain as to whether the data collected by ALS fully account for branch data associated with parent institution resources. A second problem is that the ALS data for some parent colleges or universities may not contain statistics for their professional schools.

Nonresponse error.

Unit nonresponse. The overall unit response rate for the 1996 ALS was 94.5 percent, or approximately 3,700 out of 3,900 possible institutions. Beginning in 1998, the ALS was limited to 2- and 4-year degree granting

institutions. Of approximately 4,100 degree-granting postsecondary institutions in the United States in 1998, there were 160 institutions that did not have their own library, and those institutions were excluded. There were roughly another 300 institutions that were found to be out of scope due to not having an academic library based on the survey definition. Among the remaining 3,700 degree-granting postsecondary institutions in the 50 states and the District of Columbia in 1998, the overall unit response rate was 97 percent. For detailed unit response rates, see table ALS-1.

Of roughly 3,900 postsecondary institutions in the 50 states and District of Columbia that were identified to be surveyed for the 2000 ALS, approximately 160 were identified as "child" institutions and another 240 were excluded due to being out of scope; data for the child institutions were provided by the parent institution or office, and out-of-scope institutions were defined based on their responses to screening questions. Institutions were defined as out-of-scope if: 1) they indicated they did not participate in Title IV funding; 2) they indicated they had no library at the institution; or, 3) they did not respond to the screening questions. Of the remaining 3,500 in-scope and non-child degree-granting Title IV recipient, postsecondary education institutions, approximately 3,100 responses were received yielding an overall unit response rate of 87.4 percent.

For the 2002 ALS, 3,900 postsecondary institutions were identified. Of these, approximately 170 were child institutions and another 150 were excluded due to being out of scope; the remaining 3,600 degree-granting postsecondary institutions had a response rate of 88.6 percent.

In 2004, there were approximately 4,100 possible postsecondary institutions, of which 240 were child institutions and 220 were out of scope. For the remaining 3,700 institutions, the overall unit response rate was 87.0 percent.

For the 2006 ALS, of the roughly 4,100 postsecondary institutions, there was an overall unit response rate of 88.8 percent out of 3,600 in-scope, non-child, degree-granting Title IV-receiving postsecondary institutions. Roughly 230 child institutions were excluded, with the remaining difference being primarily attributable to out-of-scope institutions.

The overall unit response rate for the 2008 ALS was 86.7 percent of the 3,800 in-scope, non-child, degree granting Title IV recipient postsecondary institutions; 250 child institutions were excluded, with additional out-of-scope institutions being excluded from the 4,200 possible.

Table ALS-1. Unit response rates by year and highest level of degree offered: Selected fiscal years 1996–2012

Highest level of degree offered	1996 ¹	1998	2000	2002	2004	2006	2008	2010	2012
Overall response rate	94.5	97.0	87.4	88.6	87.0	88.8	86.7	86.1	85.3
Less than 4-year	—	95.8	85.8	86.6	84.3	86.7	86.1	84.5	84.0
4-year	—	97.7	88.5	89.8	88.8	90.0	87.1	87.1	86.0
Doctor's	—	98.8	91.0	91.0	91.3	91.7	89.3	92.2	90.8
Master's	—	97.0	89.5	89.6	89.0	89.6	91.0	91.0	86.9
Bachelor's	—	97.9	85.5	89.5	86.5	89.2	80.0	76.4	79.3

— Not available.

¹Only the overall unit response rate was available for the 1996 survey.

SOURCE: *Data File and Documentation, Public Use: Academic Libraries Survey (ALS): Fiscal Year 1996*, Holton & George 2007, p. 7; *Academic Libraries: 1998*, Cahalan & Justh, p. 62; *Documentation for the Academic Library Survey (ALS) Data File: Fiscal Year 2000 Public Use*, Schmitt 2006, p. F-2; *Documentation for the Academic Library Survey (ALS) Data File: Fiscal Year 2002*, Schmitt 2005, p. F-2; *Documentation for the Academic Library Survey (ALS) Data File: Fiscal Year 2004 Public Use*, Schmitt et al. 2007, p. F-2; *Documentation for the Academic Library Survey (ALS) Public Use Data File Fiscal Year 2006*, Holton et al. 2008, p. 57; *Documentation for the Academic Library Survey (ALS) Public Use Data File: Fiscal Year 2008*, Phan et al. 2009, p. F-3; *Documentation for the Academic Libraries Survey (ALS) Public Use Data File: Fiscal Year 2010*, Phan et al. 2011b, p. F-3; *Academic Libraries: 2012*, Phan et al. 2014, p. 24.

There were a total of 3,700 ALS-eligible institutions for the 2010 survey, with a response rate of 86.1 percent. Excluded from the 4,100 possible postsecondary institutions were 300 child institutions plus additional out-of-scope institutions, thus leaving 3,700 eligible in-scope, non-child, degree granting Title IV recipient postsecondary institutions.

For the 2012 survey, there were approximately 3,800 degree-granting postsecondary institutions in the 50 states and the District of Columbia that had academic libraries in 2012. The response rate among these institutions was approximately 85.3 percent.

Item nonresponse. For the 1998 ALS, item response rates ranged from 66.0 to 94.0. For the 2000 ALS, most item response rates ranged from 68.6 to 86.9 percent. For 2004, overall item response rates ranged from 73.4 to 86.7 percent. Overall item response rates in 2006 ranged from 78.9 to 88.8 percent, while overall item response rates in 2008 ranged from 71.8 to 86.3 percent. For 2010, item response rates ranged from 69.3 to 85.3 percent, and for 2012 the range was 73.2 to 83.9 percent.

Measurement error. Based on preliminary analysis conducted using the 2010 ALS data collection, there is evidence of measurement error due to the survey questionnaire's design. For example, it is not clear how universities on a quarter system report for the "Fall" reference period referred to in the survey instructions. Since the reference period is in the instructions which are contained in a separate section of the questionnaire, and since instructions are frequently not read by

respondents, the respondents may not be reporting for the correct time period.

6. CONTACT INFORMATION

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7. METHODOLOGY AND EVALUATION REPORTS

General

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