

Academic Success: How Library Services Make a Difference

Ying Zhong and Johanna Alexander

Introduction

Which library initiatives are really helping students succeed academically? This question is the focus of the present research. Analyzed data comes from a 2006 survey conducted at the California State University Bakersfield (CSUB) Walter W. Stiern Library. The researchers' goal is to find the library services, programs, and/or resources most frequently identified by students as helping them accomplish their academic work more efficiently and successfully.

Academic persistence and success are critical issues for higher education and for the current research from CSUB. A 2005 Associated Press report states, "Just 54 percent of students entering four-year colleges in 1997 had a degree six years later . . ." ¹ CSUB rates are similar; for first year students in 2001, a retention rate of 78 percent is reported, but the retention rate of fourth year students that same year drops to 53 percent. ² (See Appendix, Figure 1)

Literature concerning academic success and its related concepts generally focuses on student pre-college preparation, enrollment policies, remediation and transfer programs, the role of teaching faculty, student

services, financial assistance, and theoretical models. ³ While the university community would agree that libraries are an integral part of the academic experience, is there recognition of a direct and practical connection between library programs and students' academic success? The library assumes an important responsibility to facilitate students' education, providing services, programs, and resources to assist students in being more effective and efficient in their academic career—to succeed academically.

Other related descriptors, used to discuss and measure academic success, include academic persistence, student attrition, time-to-degree, degree-completion rates, grade point average, student retention, and dropout rates. For simplification, the term academic success is used most often in this paper.

Review of selected literature

The article, "Undergraduate retention and Academic Libraries," by Kelly, presents an agenda for the role of libraries in student retention and academic success. ⁴ Other literature regarding the impact of libraries and library programs on academic success in higher educa-

Ying Zhong is Senior Assistant Librarian, Walter W. Stiern Library, California State University, Bakersfield, email: yzhong@csub.edu. Johanna Alexander is Reference Services Coordinator, Walter W. Stiern Library California State University, Bakersfield, email: jalexander@csub.edu.

tion can be grouped in five categories: 1) information competency initiatives, 2) transitional and first-year experience programs, 3) student preparation in library use prior to college, 4) students' usage and perception of the academic library, and 5) cooperative partnerships between the library and other university community groups.

Studies by Bolt and Ferguson demonstrate that students who complete library instruction courses make significant gains in academic achievement and retention.⁵ Whitmire reports that "students who think well of their library facilities" have higher self-reported information literacy skills.⁶

The integration of the library in first-year experience programs for student success and retention are recounted in articles by Boyce and Frazier as well as Brown, et al.⁷ Smalley's research points to the importance of high school libraries in preparing students for success in higher education.⁸

Various researchers present data on the role of students' perception of the library and library usage as an impact on student retention and success. Karin de Jager's article, "Library Use and Academic Achievement," compares final exam scores in different subject areas with circulation records.⁹ Whitmire's 2002 study, "analyzes the relationship between an institution's academic library resources and services and undergraduates' academic library use and self-reported gains in critical thinking."¹⁰ Both articles provide valuable reviews of earlier studies, albeit with varied results.

A number of other authors recount the impact of academic libraries and programs among multicultural student groups. These include Holmes and Lichtenstein, Jones-Quartey, Mallinckrodt and Sedlacek, Patton, and Whitmire.¹¹

"The library as a place" for both academic and social affiliations is recognized in various studies.¹² Major research on institutional student attrition also supports this. Tinto proposes that persistence in college is a function of social and academic integration. Tinto further describes four factors at the institutional level that influence student departure from higher education including "adjustment," "difficulty," "incongruence," and "isolation."¹³ Academic libraries can influence these and other factors, thus impacting positively or negatively student retention. There are several examples. Kraemer finds library usage to be a valid measure (among others) of academic integration for Hispanic students; Mallinckrodt and Sedlacek note "Library use was related to retention for all groups."¹⁴ Research by Onwueg-

buzie and Jiao study the connection of library anxiety and student research performance.¹⁵

Partnerships between libraries and other university divisions that promote academic success are highlighted in Kelly's and Kross's, *Making the Grade: Academic Libraries and Student Success* and in an article by Orgeron.¹⁶ Such program descriptions demonstrate practical ways that libraries impact student achievement and retention. Examples include an array of initiatives such as faculty/librarian collaboration, library student assistant employment and increased retention, a library's involvement in retaining women engineering students, and developing a student support model that includes library services.

What is unique about this present study is connecting the student's perspective of academic success and efficiencies with specific library initiatives. Academic libraries provide myriad services, resources, and programs; librarians gather use data to assess value; and users are surveyed about their satisfaction with a service; but little is written about what value or recognition students put on particular services for their own academic success and daily efficiency to accomplish their work.

Methodology

Survey

Funded by a CSUB Research Council grant, the survey presents data that shows the most and least frequently identified library services, programs, and resources helping students accomplish their academic work more efficiently and successfully. Out of the total 1,363 surveys taken, about 95 percent of all surveys (n=1,295) provide complete data.¹⁷

Respondents

Nearly 70 percent of all respondents represent the under-26 age group and about 30 percent represent the 27 to 59-age bracket. Female students equaled 75 percent of the respondents. Male respondents totaled 25 percent. The ethnic breakdown of respondents includes: 47 percent white, nearly 42 percent Mexican American or other Latinos, 6 percent African Americans, and 5 percent Asian. Lower division students represent 26 percent of all respondents and upper-division students present the largest contingency with 58 percent, totaling 84 percent undergraduates. Graduate students represent 16 percent of the responses. First-generation college students represent 61 percent of responses. GPAs distribute fairly evenly among respondents with 22 percent with 2.5 GPAs or less, 33 percent with 2.6 to 3.0 GPAs,

27 percent with 3.1 to 3.5 GPAs, and 18 percent with 3.5 or greater GPAs. (See Appendix, Figures 2 through 7)

Student responses result in an evaluation of thirty-three factors, arranged in six categories covering 1) library services, 2) research assistance and instruction, 3) resources, 4) access and technology, 5) personnel, and 6) facilities. Student responses show if particular factors help them accomplish their academic work more efficiently and successfully. The data gathered is the focus of this paper.

Survey categories and factors

Services

- Circulation Services
- Electronic Reserves
- Print Reserves
- Pay to Print in Library Reference Area
- Interlibrary Loan
- Renewing Books Online
- Renewing Books In-Person

Research Assistance and Instruction

- Reference/Research Assistance at Reference Desk
- Reference/Research Assistance via Email
- Reference/Research Assistance via the 24/7 service
- Individual Research Assistance Appointments with Subject Specialists
- Library Orientations
- Library For-Credit Courses
- Basic College Composition Library Lab

Resources

- Library Web Site
- Electronic Periodicals & Databases
- Library's Book Collection
- Library's Media Collection

Access and Technology

- Library Computer workstations
- Off-Campus Electronic Access to Library Resources
- In-Library Wireless Access for Laptops
- Main Library Hours

Personnel

- Reference/Research Assistance Personnel Effectiveness
- Reference/Research Assistance Personnel Friendliness
- Circulation Personnel Effectiveness
- Circulation Personnel Friendliness
- Interlibrary Loan Personnel Effectiveness
- Interlibrary Loan Personnel Friendliness

Facilities

- Library Group Study Rooms
- Library Seating
- Quiet Areas in Library
- Library Security
- Library Facilities in General

The ten factors cited most frequently and the five least frequently cited factors are compared both in aggregate and among fourteen different demographic groups. This preliminary paper reports on findings from six demographic groups according to age, gender, ethnicity, student class standing, first-generation college students, and grade point average (GPA). These parameters are used to control the amount of data analyzed and limit the length of the paper, but also to provide a broad picture of what various student groups most often deem significant. Two questions posed in the analysis are: 1) what are the most often and least often identified factors, and 2) are there commonalities or differences in the frequency a factor is identified by different demographic groups? Data are shown in the following figures but only when the factor indicates enough response to be in the top ten most frequently identified or the five least identified factors.

Results in aggregate

For all respondents, the ten most frequently identified factors for helping students accomplish their academic work efficiently and successfully are shown in Appendix, Figure 8. For all respondents, the most frequently identified factors represent the categories of facilities, technology and access, and library resources. Of particular note, library facility factors are the most frequently identified for all respondents. Four out of the top six factors deal with facilities. Noticeably, for all respondents, the library web site is identified secondly most often, signaling its importance as a portal to library resources. Access and technology factors (except in-library wireless connections) are also in the top ten most frequently identified set. Only one factor of the research assistance and instruction category is recognized in the ten most frequently identified group and that is reference/research assistance at the reference desk (numerically ranked in the tenth position).

Factors overall receiving the least recognition in helping students accomplish their academic work efficiently and successfully are shown in Appendix, Figure 9. Certain factors under the research assistance and instruction category and interlibrary loan are included in

the list. The library for-credit course is the least recognized factor. Students also report being frequently unaware of the five lowest ranked services. In spite of this, over 45 percent of respondents still find these five least identified factors helpful.

Results by demographic group

Age

Appendix, Figure 10 shows all age groups most frequently identify the library facility as numerically number one in helping them accomplish their academic work efficiently and successfully. Additionally, library quiet areas are also identified within the top six for all ages. A larger percentage of younger students, those 26 and younger, identify library quiet areas as significant over other age groups.

All ages, including the under-26 age group, identify electronic periodicals & databases as the third most often cited factor. Though Generation-Y students often are thought to be Google™ dependent regarding academic research, the survey results temper that concern.

The significance of research assistance factors for different age groups varies. Students under 26 years of age do not even mention research assistance factors as important in the ten most frequently identified. In fact, as shown in Appendix, Figure 11, for the under-26 age group, four out of the five least identified factors are in the category of reference assistance and instruction. For older respondents, 27 to 40 years of age, reference/research assistance at the desk is in the ten most frequently identified factors (numerically number nine). Additionally, for the 41 to 59 age group, three out of the ten most recognized factors are related to reference assistance. For this same age group, reference personnel friendliness is more frequently identified as helpful, than other reference and instruction factors.

Gender

Appendix, Figures 12 and 13 compare the most and least identified factors by gender. Computer workstations in the library are considered more important by female students. A larger percentage of male students vs. female students, more frequently identify reference/research assistance at the reference desk. Only male students identify reference personnel effectiveness in the top ten.

Ethnicity

Appendix, Figures 14 and 15 highlight results by eth-

nicity. Most research assistance and instruction factors are in the least recognized list for all ethnic groups. However, reference personnel friendliness is one of the ten most frequently identified factors for most ethnicities. Out of all ethnic groups, only Mexican American students identify book collections in the top most frequently cited factors for helping them accomplish their academic work efficiently and successfully (numerically number eight).

Student class standing (freshmen, etc.)

Appendix, Figures 16 and 17 depict results by student class standing (freshmen, sophomore, etc.) The largest percentage of freshmen most frequently identify the library web site as helping them accomplish their academic work efficiently and successfully (numerically first). All other class groups identify the library facility most frequently (numerically first). All class groups identify off-campus electronic resource access within the top ten factors. Graduate students identify this same factor in the top four most frequently cited. All groups cite library study rooms within the top ten factors, but a larger percentage of seniors cite this factor (numerically number five). Library hours and library computer workstations are cited by all undergraduates within the top ten most frequently identified factors, but are not in the top ten for graduate students. Only the graduate student group cites renewing books (both online and in-person) as one of the top ten frequently identified factors for efficiency and success.

Freshmen through junior students consider inter-library loan the least identified factor. As one would expect, this is not the case for seniors and graduate students.

First-generation college students

Only first-generation college students (versus non-first-generation college students) cite reference personnel friendliness in the top ten most frequently identified factors. Nine of the top ten most frequently cited factors are the same for both groups, and include facilities factors, the library web page, electronic periodicals and databases, off-campus electronic resource access, and library computer workstations. Renewing books online is number eight in the most frequently identified factors for non-first-generation college students. The five least frequently identified factors are the same for both groups and include research assistance and instruction factors and interlibrary loan. Appendix, Figures 18 and 19 show these results.

GPA

Students' GPA is an important indicator of academic success and thus taking a closer look at this group is valuable. Appendix, Figures 20 and 21 provide results by student grade point average. Students with 2.6 to 3.0 GPAs most frequently cite the library web site as the top (number one) factor. All GPA groups identify off-campus access to library resources in the top ten most frequently cited factors, but a larger percentage of students in the highest GPA group identify this factor more than other GPA groups.

The lowest GPA group does not mention reference assistance in the top ten, nor does the 3.1 to 3.5 GPA group. Reference/research assistance at the reference desk is in the top ten for only the 2.6 to 3.0 group. Reference personnel effectiveness is in the top ten for only the 3.5 and above group. Reference personnel friendliness is recognized in both these same GPA groups. All GPA groups report library computer workstations in the top ten most frequently cited factors. Again, all GPA groups' least cited factors include library for-credit courses as well as many other research assistance and instruction factors.

Conclusions, implications, and strategies

After analyzing the data, what is the direct and practical connection between library initiatives and students' academic success? What seems to matter the most in libraries as perceived by students in accomplishing their academic work efficiently and successfully? What seems least important from the student viewpoint?

Students' views

Foremost, the findings and observations from this study validate the notion that academic libraries and library initiatives are viewed by students to directly and positively impact their academic success.

The library should implement strategies to communicate to university accreditation committees, administrators, and the campus community as a whole, the importance of libraries and library initiatives in directly impacting students' academic success and ultimately, degree completion.¹⁸

Secondly, the library needs to demonstrate to students exactly how utilizing academic library services, readily accessing its resources, and taking advantage of its programs will improve academic success.

Facilities

Library facilities in general and other facilities factors

(group study rooms, quiet areas, etc.) are prevalent and significant throughout all respondent data and the six demographic groups. The importance of a student's positive views and experiences with the university library and its impact on student outcomes is supported by Whitmire.¹⁹

The library should adopt strategies to promote academic and social integration, encouraging library use and connections. Additionally, the library should continue to focus on what is deemed most critical to student success including the maintenance of a study-friendly environment and facility.

Electronic resources

The largest percentage of respondents, both in aggregate and in the six study groups, identify the library web site and electronic periodicals and databases as most significant over and above the physical print collections. Decades of library material budget reductions may be the reason, in part, for students not readily identifying book collections in the top-tier important factors.

The library should adopt strategies to support, continually enhance, and market the library web site and electronic periodical and database collections. Additionally, monographic materials should be expanded and marketed to students. Attention to these services and resources are significant.

Access and technology

Regarding access and technology, off-campus electronic access is clearly significant to respondents and effectively essential for student efficiencies and academic success. But what may prove equally critical, is that users still put high value and significance on computer workstation access in the library. Library computers are used for additional academic work, such as accessing and using application programs. It may be assumed that students more often access and actually prefer to access library electronic resources and other applications remotely from home, work, or by laptop in the library's wireless environment. However, this does not seem to be the case. Two factors, off-campus electronic access and library provided computer workstations, are not exclusive of each other and, in reality, serve to provide continuous, non-obstructed access and services. It is clear that student academic success and retention are improved by offering busy students, with pressured and varied schedules, more options for efficiently accessing resources.

The library should adopt strategies to support, maintain, and refresh library workstations, optimize student

access to current computer equipment, and improve and expand off-campus access to electronic resources both in collection development aspects and by providing laptop and/or other access programs.

Reference personnel

Reference personnel friendliness, according to respondents, is more frequently recognized than other reference assistance factors. This result is supported by previous research that shows that friendliness and openness in a reference encounter can result in increased user satisfaction even more than a correct answer. The academic and social integration theory also supports this premise.²⁰ Students need to feel they are a part of the institution, empowered by using its resources, and at ease and welcomed in their educational environment. The concept of “the library as a place” that supports students’ academic and social integration is an important one.

Training, evaluation, and assessment strategies should focus on reference personnel friendliness in addition to effectiveness. Library personnel need to understand their critical role in fostering a welcoming environment that facilitates student success and improves institutional retention.

Service visibility

Library services and programs which are less visible, such as library for-credit courses, interlibrary loan, reference/research assistance via email, 24/7 reference services, and individual appointment services with subject specialists, consistently fall into the least frequently identified set.

The least frequently identified factors by all respondents are associated with low recognition (35 to 60 percent of students are unaware of these factors). However, these same factors share similarities. The factors are less obvious or evident to students entering the library facility; require some knowledge of how the service works on the part of the student; and in many cases are mediated services requiring electronic, phone, or individual communication in order to receive the service.

These initiatives, while important to certain groups of users, are for a larger percentage of students, undetected. These factors may represent “safety-net services” that facilitate academic success for some students. However, until a larger percentage of students become aware of these services, the role of these factors in academic success cannot be fully evaluated.

The library should adopt strategies to create, implement, and market library initiatives that: 1) target spe-

cific student populations based on findings, and 2) focus marketing on less frequently identified initiatives.

Library instruction

Based on evidence from studies by Bolt and Ferguson, previously mentioned, there is clear evidence that library instruction courses can improve student persistence, grades, and overall academic achievement.²¹ In spite of these benefits, instructional factors have very low recognition in this present study. No instructional factor is listed in the group of ten most identified. Likewise, the for-credit course factor is listed in the least identified set.

The library needs to implement strategies that proactively highlight instructional benefits. Librarians need to create instructional courses that are relevant to student needs, assist students in their academic development, and provide real student learning experiences. These courses should not only teach library and research skills, but as Whitmire suggests, also enforce and improve students’ academic experience in the areas of critical thinking, analysis, and writing.²²

Applicability and future research

The present results are applicable to other institutions by providing a replicable assessment model as well as outcomes and general guidelines for services that are meaningful to different student populations. Of course, characteristics of the institution and library, such as mission, student population, budget, and facilities, will likely result in varied outcomes.

Academic success and student efficiencies, in this study, are based on the student’s perspective. While student self-reported GPA is included as a measure, additional success measures such as years-to-degree completion, retention rates, etc. could be used in other research models. Areas for future research, using currently collected data, include analyzing all survey data for the other eight demographic groups and comparing most and least frequently identified factors with satisfaction levels.

In honor of our families.

Notes

1. Associated Press, “U. S. College Drop-Out Rate Sparks Concern,” MSNBC Website, November 15, 2005, <http://www.msnbc.msn.com/id/10053859/> (accessed December 16, 2006).

2. California State University, Bakersfield (CSUB). “CSUB Regularly Admitted First-Time Freshmen: One-

Two-, Three-, and Four- Year Retention Rates,” (workshop, Foundations of Excellence in the First College Year Workshop Data, CSUB, 2006).

3. Clifford Adelman, “Answers in the Tool Box: Academic Intensity, Attendance Patterns, and Bachelor’s Degree Attainment United States” (Washington, D. C.: GPO, June 1999) United States Department of Education <http://www.ed.gov/pubs/Toolbox/index.html> (accessed December 9, 2006); Jacquelyn Kegley and Louanne Kennedy, “Facilitating Student Success in Achieving the Baccalaureate Degree: Report of the California State University Task Force on Facilitating Graduation” (December 2002), <http://www.calstate.edu/acadaff/facilitatinggraduation.pdf> (accessed November 2006); Vincent Tinto, *Leaving College: Rethinking the Causes and Cures of Student Attrition*, 2nd ed. (Chicago: University of Chicago Press, 1993); Amaury Nora, “Two-Year Colleges and Minority Students’ Educational Aspirations: Help or Hindrance?” *Higher Education: Handbook of Theory and Research* 9 (1993): 212–47; John M. Braxton ed. *Reworking the Student Departure Puzzle* (Nashville: Vanderbilt Univ. Press, 2000).

4. Maurie Caitlin Kelly, “Student Retention and Academic Libraries,” *College and Research Libraries News* 56, no. 11 (December 1995): 757–59.

5. J. A. H. Bolt, “A Study of the Effects of a Bibliographic Instruction Course on Achievement and Retention of College Students.” *Dissertation Abstracts* 47, no. 12 (June 1987): 4219; John Ferguson, “Taking the Lead: The Case for Proactive Information Literacy Training,” (presentation, Internet Librarian 2001, Pasadena Conference & Exhibition Center, Pasadena, CA, November 6-8, 2001) <http://www.rlc.dcccd.edu/lrc/pdfs/takingthelead.pdf>. (accessed December 16, 2006).

6. Ethelene Whitmire, “Factors Influencing Undergraduates’ Self-Reported Satisfaction with Their Information Literacy Skills,” *portal: Libraries and the Academy* 1, no. 4 (Oct. 2001):409–20, quote from 417–18.

7. Roslyn A. Boyce, “Library and Information Studies Camp—Addressing the ‘First-Year Undergraduate Experience’ at the University of Canberra,” *Education for Library & Information Services: Australia* 16, no. 1 (May 1999): 29–45; Nancy E. Frazier, “In the Loop: One Librarian’s Experiences Teaching within First-Year Learning Communities,” *College & Undergraduate Libraries* 13, no. 1 (2006): 21–31; Ann Goebel Brown, Sandra Weingart, Judith R. J. Johnson, and Betty Dance, “Librarians Don’t Bite: Assessing Library Orientation for Freshmen,” *Reference Services Review* 32, no. 4 (2004): 394–403.

8. Topsy N. Smalley, “College Success: High School Librarians Make the Difference,” *Journal of Academic Librarianship* 30, no. 3 (May 2004), 193–98.

9. Karin de Jager, “Library Use and Academic Achievement,” *South African Journal of Library & Information Science* 65, no. 1 (March 1997): 26–30.

10. Ethelene Whitmire, “Academic Library Performance Measures and Undergraduates’ Library Use and Educational Outcomes,” *Library & Information Science Research* 24, no. 2 (2002): 107–28, quote from 110.

11. Barbara Holmes and Art Lichtenstein, “Minority Undergraduate Success: Librarians as Partners,” *College and Research Libraries News* 59, no. 7 (July 1998): 496–97; Theo S. Jones-Quartey, “The Academic Library’s Role in the Effort to Improve Ethnic Minority Retention,” *The Educational Forum* 57 (spring 1993): 277–82; Brent Mallinckrodt and William E. Sedlacek, “Student Retention and the Use of Campus Facilities by Race,” *NASPA Journal* 24, (winter 1987): 28–32; Beth Ann Patton, “International Students and the American University Library,” (master’s thesis, Biola University, 2002) ERIC Database, ED 469810; Ethelene Whitmire, “Cultural Diversity and Undergraduates’ Academic Library Use,” *Journal of Academic Librarianship* 29, no. 3 (May 2003): 148–61.

12. Council on Library and Information Resources, “Library as Place: Rethinking Roles Rethinking Space” (Washington, D. C.: Council on Library and Information Resources, February 2005), <http://www.clir.org/PUBS/reports/pub129/pub129.pdf>. (accessed December 9, 2006); Patience L. Simmonds and Syed Saad Andaleeb, “Usage of Academic Libraries: The Role of Service Quality, Resources, and User Characteristics.” *Library Trends* 49, no. 4 (spring 2001): 626–34, specifically 633.

13. Tinto, *Leaving College*, 37.

14. Barbara A. Kraemer, “The Dimensionality of Academic and Social Integration in Persistence Studies of Hispanic Students,” in the 18th Annual Meeting Papers of the Association of the Study of Higher Education, Pittsburgh, PA, November 4–10, 1993, (ASHE Annual Meeting Paper, 1993) ERIC Database, ED 365184; Mallinckrodt and Sedlacek, “Student Retention,” cited in ERIC Database, Abstract, EJ 355278.

15. Anthony J. Onwuegbuzie and Qun G. Jiao, “Information Search Performance and Research Achievement: An Empirical Test of the Anxiety-Expectation Mediation Model of Library Anxiety,” *Journal of the American Society for Information Science and Technology* 55, no. 1 (January 2004): 41–54; Anthony J. Onwuegbuzie and Qun G. Jiao, “The Relationship Between Library Anxiety and Learning Styles Among Graduate Students: Implications For Library Instruction,” *Library & Information Science Research* 20, no. 3 (1998): 235–49.

16. Maurie Caitlin Kelly and Andrea Kross, eds. *Making the Grade: Academic Libraries and Student Success* (Chicago: As-

sociation of College and Research Libraries, 2002); Elizabeth Orgeron, "Integrated Academic Student Support Services at Loyola University: The Library as a Resource Clearinghouse," *Journal of Southern Academic & Special Librarianship* 2, no. 3 (spring 2001) http://southernlibrarianship.icaap.org/content/v02n03/orgeron_e01.htm (accessed January 6, 2007).

17. Ying Zhong, "Information Needs and Information Seeking Behavior of CSUB Undergraduates," (Funded grant for 2005/06 from the University Research Council of California State University Bakersfield, 2005).

18. Bonnie Gratch-Lindauer, "Comparing the Regional

Accreditation Standards: Outcomes Assessment and Other Trends," *Journal of Academic Librarianship* 28, no. 1-2 (January-March 2002): 14-25.

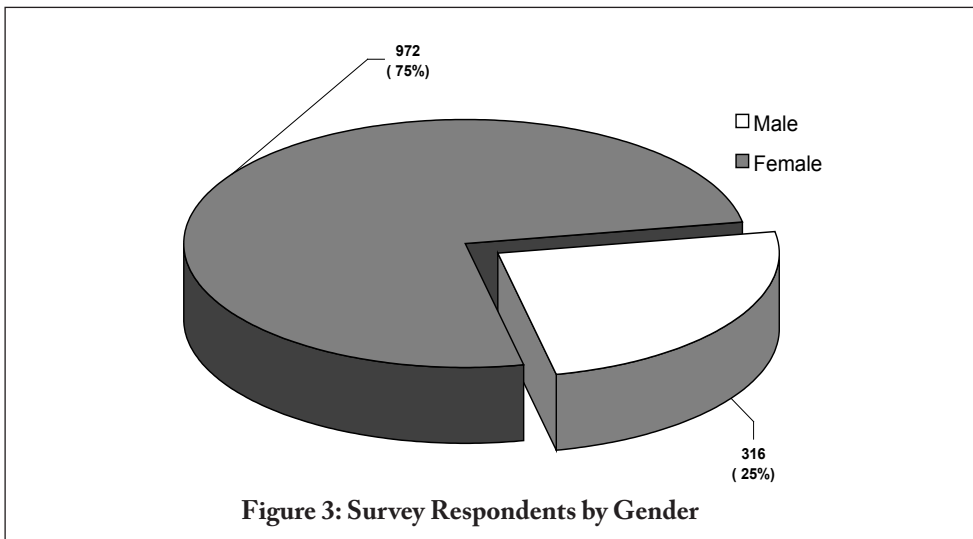
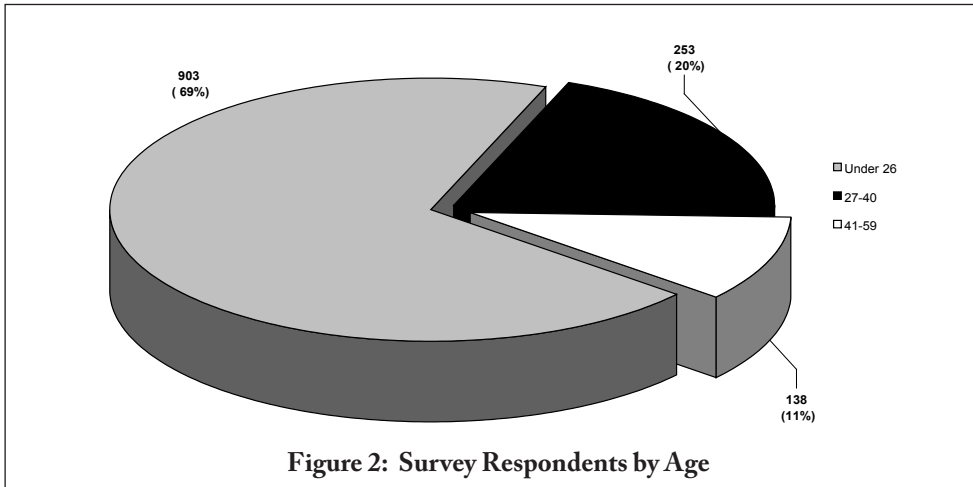
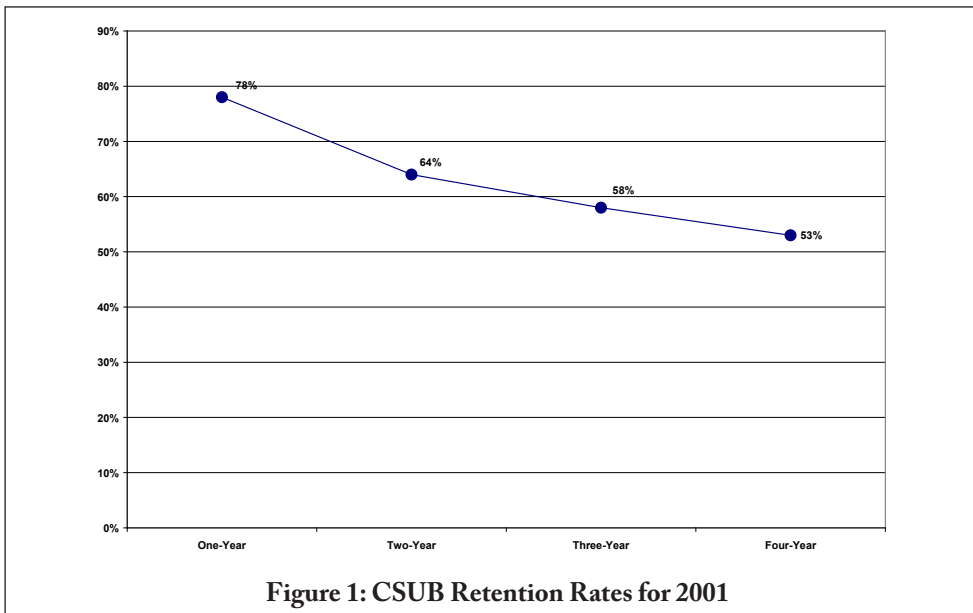
19. Whitmire, "Academic Library Performance Measures," (2002); Whitmire, "Factors Influencing Undergraduates'," (2001).

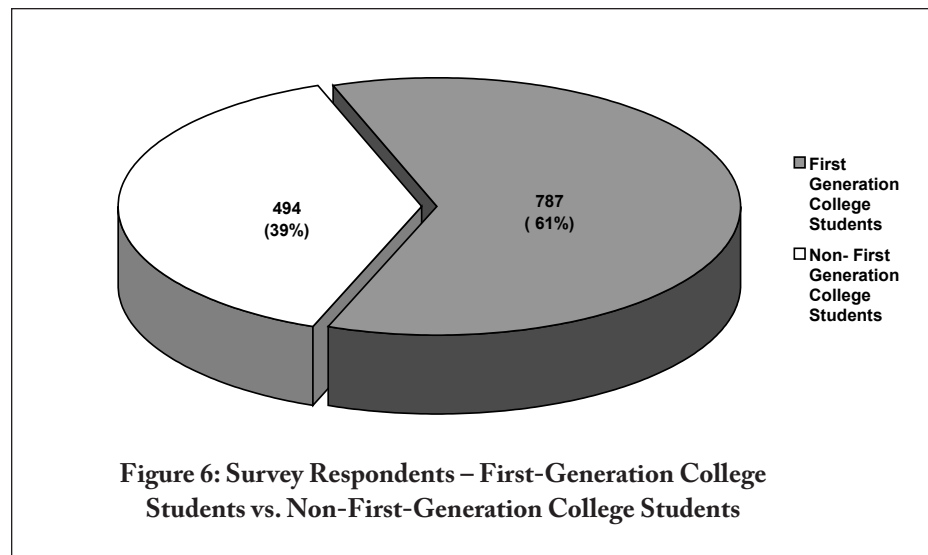
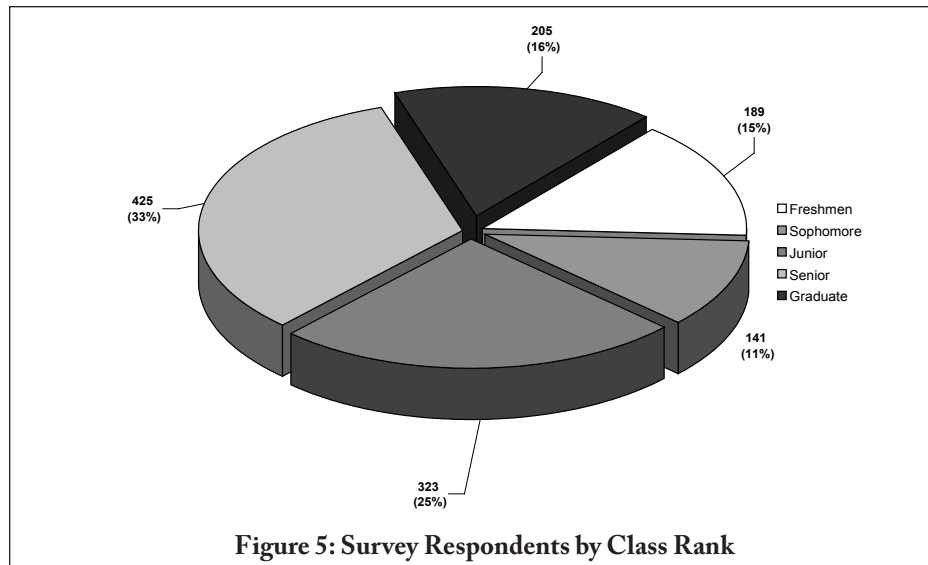
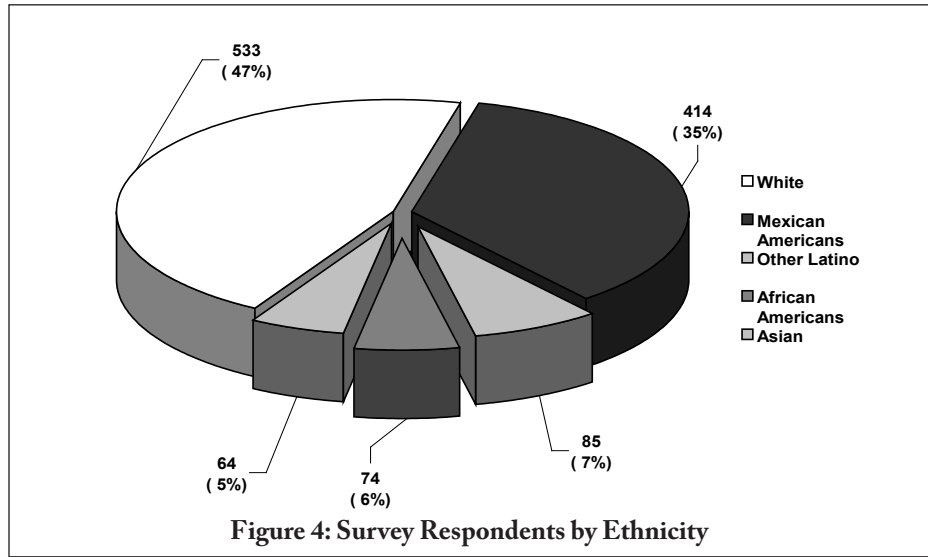
20. Tinto, *Leaving College*, 84-137.

21. Bolt, "A Study of the Effects of a Bibliographic Instruction Course;" Ferguson, "Taking the Lead."

22. Whitmire, "Factors Influencing Undergraduates'," (2001): 418.

Appendix





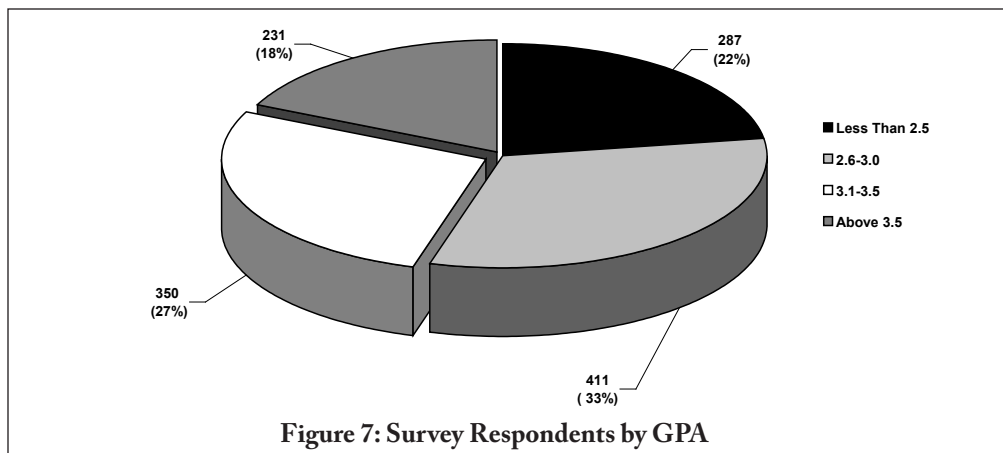


Figure 7: Survey Respondents by GPA

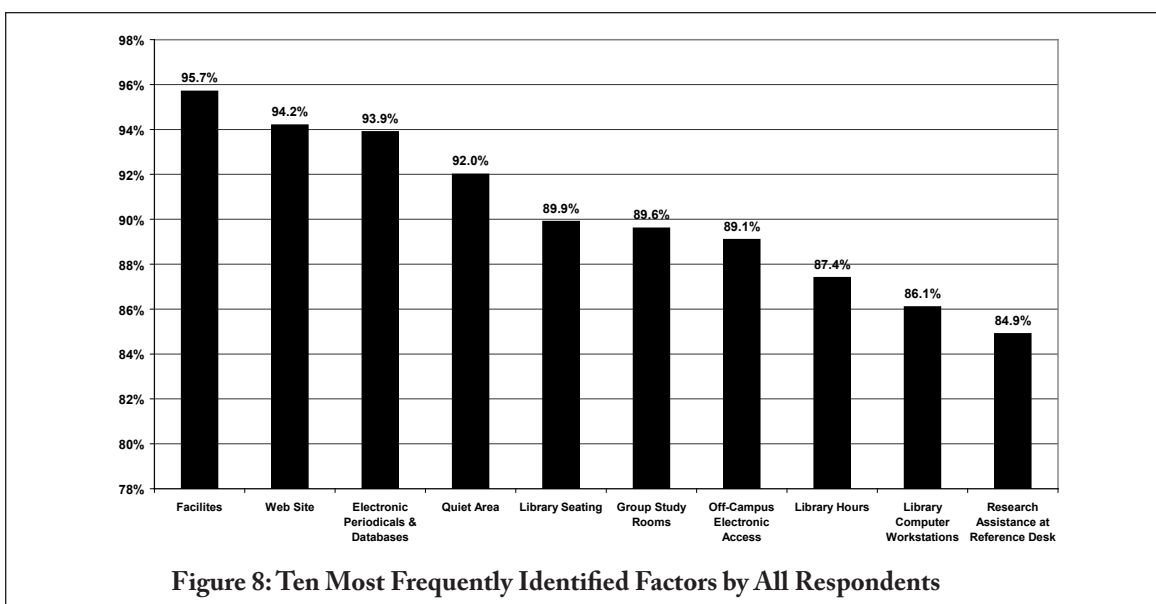


Figure 8: Ten Most Frequently Identified Factors by All Respondents

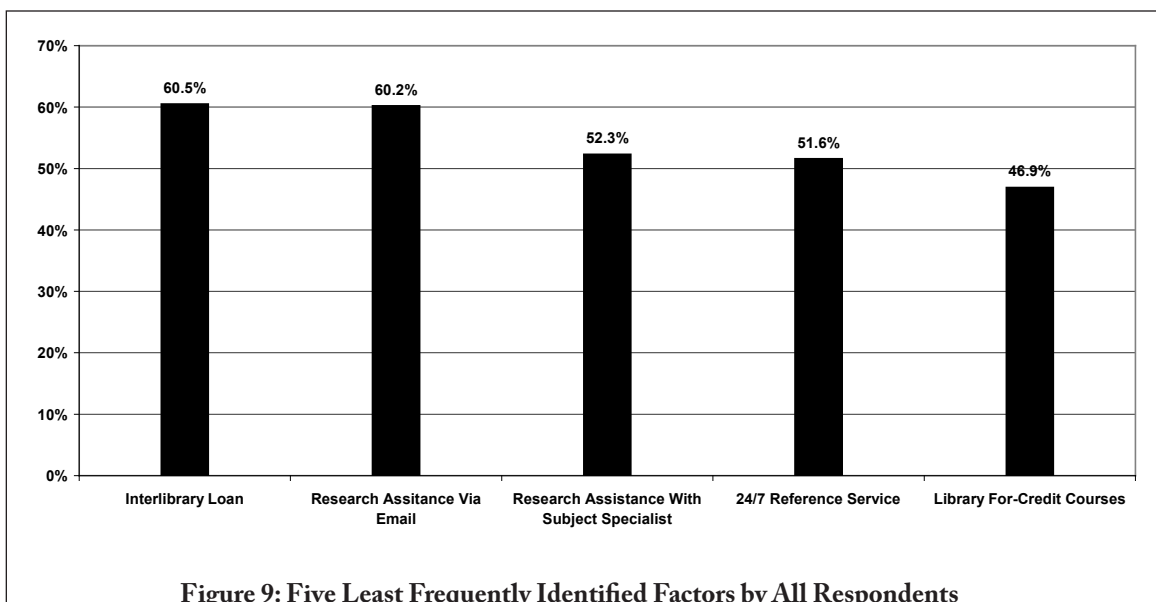


Figure 9: Five Least Frequently Identified Factors by All Respondents

