

Student Persistence: How the library makes a difference

Wil Weston

Head of Collections

San Diego State University

Presented at the California Academic & Research Libraries 2016 Conference

March 31 – April 2, 2016

Costa Mesa, California

Abstract

Researchers have long been interested in student persistence and the forces, both social and academic, working for and against a college student throughout their academic career. This paper provides an overview of how the academic library has approached student persistence through the various contexts in the library literature and highlights those factors in the literature which distinguish the academic library's contributions to student persistence. Finally, some examples of how an academic library can promote student persistence through library programming and policy are provided.

Introduction

What is Student Persistence? You will often hear the term 'student retention' used interchangeably with 'student persistence'. However, for this paper, I differentiate between these two terms and instead use Hagedorn's (2005) definition of student persistence. Hagedorn argued that "institutions retain students and students persist" (pg 92). Put a different way, from a student's perspective, their reenrollment in college is viewed by them as persisting and a student's reenrollment from the college's point of view is that they were retained by that institution. I favor this definition and it is one that comports well with the current mission of an academic library, given its unique service orientation. It is within this broader service context that an academic library can impact a student's academic persistence and the attainment of their educational goals.

An academic library's services, policies, and student engagement within the context of student persistence is likely to be perceived as a reflection of that library's commitment to the student's well being and success in college (Braxton et al., 2014). Higher education studies on college and university organizational behavior, communication, and engagement with its students has been positively linked to student persistence (Bean, 1980; Berger & Braxton, 1998). The more a student perceives that their institution is committed to their welfare and their success, the greater degree of commitment that student has to their institution (Braxton et al., 2014), which, in turn, results in reenrollment (and therefore increased student retention). Plainly put, an academic library that focuses upon student persistence and integration into college is in effect also addressing the broader institutional concerns of student retention.

The Academic Library and Student Persistence: An overview of the Library Literature

In the beginning...

The role of the academic library in college student persistence, over the last decade, has been debated and is still a hot topic of research, especially when linked with demonstrating the 'value' of the academic library. But this isn't really a new topic. The debate's origins began in the 1960's when Barkey (1965) found a correlation between grade point average and use of a college library, which was later expanded upon by Kramer & Kramer (1968), who demonstrated a statistically significant correlation between library use and persistence among college freshmen. Interestingly, this research also echoed some of the findings in the higher education literature at the time as well; Panos & Astin (1968) found evidence in their study that it was less likely for students to dropout of college when the students frequently participated in musical/artistic activities and were regular users of the academic library.

The 1970's.

In the 1970's, libraries began to focus upon performance measures (Hamburg, Ramist, & Bommer, 1972). Performance measures refer to several kinds of measures that reflect the performance of the library. These include: inputs, generally library resources for hiring staff and purchasing materials; measurements reflecting internal operations, like gate counts and number of reference questions answered; outputs, generally defined as the effectiveness of service delivered; and outcomes, defined as the impact of the service provided. It is interesting to note in Hamburg, Ramist, and Bommer's (1972) paper, they observed that the library standards at the time emphasized "measuring inputs to the library, as opposed to measuring outputs or benefits imparted to the users" (pg. 124). They cited that one of the largest difficulties with measuring outputs was the ability to easily match collected library data to undergraduate/graduate data; for example matching the number "of document exposures (whether in reserve and general circulation) affected by undergraduate and graduate enrollments, research activity, and other factors" (pg. 125).

Five years later, there were two additional key observations made regarding library performance measures. In White's (1977) review of library statistical measurements, he pointed out that many of the current "statistical measures leave out the human element of an operation and libraries are, above all else, quintessentially human operations" (pg. 136). And that same year, Zweizig (1977) noted that libraries commonly used measurements which demonstrated their potential for service; however, they needed to evolve to measures of their actual service. This change in approach represented a very important switch in perspective in that there was a recognition of the human impact of library services, and that those measures needed to be related to the library user. Simply measuring how frequently a service was used was not a measurement of the quality or of the value of that service.

The 1980's.

Within the library literature, during the early 1980s, much of the work that was done in the area of performance measures for academic libraries was characterized by the struggle to define performance measures which reflected the library's effectiveness in providing services

(Van House, 1989). Additionally, most of these academic library studies examining performance measurements typically examined a specific service and these efforts tended to concentrate on inputs rather than outputs (Goodall, 1988). In other words, just because students used a service as revealed through measurements like counting the number of times a book was circulated or counting how many students attended library instruction sessions in year, it did not translate into a measurement of program or service impact.

Reflecting on this difficulty in defining performance measures which could effectively measure the human impact of library services, Childers (1989) mirrored Zweizig's (1977) arguments, stating that most library studies were still studies of reach, as opposed to studies of impact, and that many of the resulting statements of reach were used as statements of program impact within the field of library and information science. Childers (1989) argued that "if one sees the ultimate mission of the field as improving the state of the individual, impact on the person must be considered, and one must engage in true evaluative research in order to assess the field's success or failure" (pg. 262).

In support of this argument, there were two studies during the 1980s which did demonstrate Childer's call for the application of evaluative research reporting on a library service's impact upon student persistence. In 1987, Self's study found that there was an apparent relationship between students' grades and library reserve use when examined in aggregate, but determined that there was not a strong enough relationship for the use of reserve materials to serve as a predictor of an individual student's grade. Also, that same year, Mallinckrodt & Sedlacek's (1987) study in the higher education literature found that library use was related to persistence for all student groups (white, black, and international students) in their study. Furthermore, the results of this study suggested that the use of campus facilities was related to student persistence particularly for black students (Mallinckrodt & Sedlacek, 1987); this is particularly significant given Whitmire's (2003) findings, almost two decades later, in which she discovered that black students were more likely to take advantage of library services. Her findings suggested that the black students' use of the academic library was partially a result of their search for a sense of community when they couldn't find it anywhere else on campus (JBHE, 2003).

The 1990's.

In the 1990's there were two key articles in the library literature published: one was on the importance of matching library assessment to university goals (Allen, 1992), and the other was on the impact of academic libraries as a function of undergraduate education (Dow, 1998). Allen (1992) outlined some of the key issues surrounding the inclusion of academic libraries in the institutional planning and assessment process; she noted that the largest problem was the fact that libraries are frequently regarded as support organizations, rather than instructional organizations. "Libraries seldom offer fully developed curricula for teaching information retrieval and use skills" (Allen, 1992, pg. 63). The result of this perception was that academic libraries are often left out of a college's plan to measure instructional outcomes.

Other institutional goals where Allen (1992) suggested an academic library should be able to match their strategic plan to university goals were focused on institutional objectives like training students in methods of scholarship and research or, alternatively, teaching students how to carry out applied research. Furthermore, she recommended goals aimed at lifelong learning and independent learning, which were obvious cases of congruity between college goals and

areas of library impact. Allen (1992) noted that "college graduates definitely see lifelong learning as a key educational outcome" (pg. 65), and "the ability to find and use information is clearly key to successful lifelong learning" (pg. 65). Finally, she reasoned that both research library and university missions seek to serve as conservators of cultural heritage and be cultural leaders within the community, which further aligns the academic library's mission with that of the larger institution (Allen, 1992).

The importance of using the university mission and goals as a lens to examine library effectiveness and the development of assessments of library services was not merely to 'prove' the value of the library to university administration. Even today, that remains an important concern. It was to lend additional focus to library effectiveness studies beyond the mere regurgitation of a series of inputs and to instead measure impactful library effectiveness outputs (Goodall, 1988; Van House, 1989; Childers, 1989). For Boyer (1989) the academic library was a key factor in the quality of learning in college, and he suggested that in order to close this gap between the library and the classroom a library needed to be a vital part of the undergraduate experience. What Allen (1992) proposed in her article was a way of closing this gap by including assessments of an academic library's instruction and services in the institutional planning process by matching how they supported the educational mission and goals of its university.

Another key work of the nineteen nineties was Ronald F. Dow's (1998) article, *Using Assessment Criteria to Determine Library Quality*. This article described how the River Campus Libraries at the University of Rochester developed their assessment criteria. Based on a review of the higher education literature, they determined that undergraduate education seemed to be "more a function of what was done programmatically than a function of the resource base of the institution" (Dow, 1998, pg. 279). From this Dow (1998) concluded that the library needed to look beyond its resource base as a means of identifying the library's impact on undergraduate education. Furthermore, it was determined in this study that there were two measurements of a college's intellectual achievements: 'quality of effort by students and faculty to advance learning,' and 'quality of interpersonal life' on campus. Dow (1998) explained that the assessment program therefore focused on gathering evidence which reflected the degree to which library programs influenced the 'quality of effort that students and faculty invested in learning experiences' and on evaluating the effect that the libraries might have on the 'quality of interpersonal life' on campus. The planned assessment activities took three forms: formal, informal, and point of view (Dow, 1998).

For example, the formal assessment examined issues surrounding student experiences with the library related to their course-work, writing assignments, computer use, or online catalog. The informal assessment focused on gathering ideas for improving the quality of interpersonal life on campus (Dow, 1998). Finally, the last category of assessment bridged these first two areas by focusing on the impact of college on students based on the extent and context of a student's interactions with faculty and their student peers in the library. Additionally, Dow looked to the persistence literature for theoretical support by grounding his study in Astin's (1984) involvement theory regarding the amount of energy that the student devoted to the academic experience as support for this category.

Dow's article on the assessment of the library as a component of the college and university learning community was significant for three reasons. First, this study was grounded in both the library literature and the higher education literature, where in previous studies the approaches were generally from one perspective, either a higher education or a library and

information science frame of reference. Its focus was on library assessment as a tool in which to measure an academic library's impact on educational quality and student learning. Second, this case study was evaluative, as suggested by Childers (1989); the assessment measures were used to determine the difference in students between the time when they begin college and when they graduated. Third, the study specifically recommended the need for an academic library to look beyond its resource base as a means to identify its impact on undergraduate education. The library identified measurements that assessed the academic library's impact upon the quality of interpersonal life on campus for students. Finally, this case study was unique in its consideration of an academic library's social impact as a part of its library effectiveness measurements.

The 2000's to present.

At the beginning of the millennium much of the literature focused upon outcomes assessment (Fraser, McClure, & Leahy, 2002; Gratch-Lindauer, 2002, Kyrillidou, 2002). The Association of Research Libraries (ARL) E-Metrics project (Fraser, McClure, & Leahy, 2002) stated that academic libraries needed to "develop a process to identify and operationalize library outcomes that contributed to institutional outcomes" (pg. 512). This research was largely based on the research which was done by Allen (1992) and Gratch-Lindauer (1998, 2002), who suggested an academic library should be able to match assessment outcomes to university goals and objectives. They recommended matching an academic library's contributions to teaching and literacy skills to the quality of the teaching and learning environment (Gratch-Lindauer, 2002). Generally, the literature argued that it was the responsibility of the academic library to inform the college of the roles that it played in support of the college's institutional outcomes.

Early in the 2000's, Kuh & Gonyea (2003) presented their study which found that "academic challenge is positively related to library use" (p. 8). As a result, they argued that students who frequently use library resources were also more likely to work harder to meet a faculty member's expectations. It was also determined that students at academically challenging institutions were assigned projects that required integrating ideas, putting different facts and ideas together, and applying class material to other areas in life. Furthermore, these students were more likely to ask a librarian for help, use indexes and databases, and make thoughtful judgments about the quality of information that they received (Kuh & Gonyea, 2003). Kuh & Gonyea's (2003) study implied that there was a relationship between 'student persistence and library use' and 'library use and student excellence.'

Kuh & Gonyea's (2003) study also reflected findings made by Whitmire (2001, 2002) in which she found a strong correlation between undergraduate use of an academic library and undergraduates' active learning and engaged writing activities (Whitmire, 2001). For all three years of this longitudinal study (Freshman through Junior year) the strongest relationship was between undergraduates' engaged writing activities and their academic library use and high school library use (Whitmire, 2001). Additionally, Whitmire's (2002) study the following year, further supported her findings from 2001 in which she discovered that undergraduates who engaged in more student-faculty interactions, active learning, and writing activities, regardless of the type of institution they attended, also reported greater library use.

In 2007, a key study on the academic library's impact on persistence was published; Mezick (2007) used collected library data to examine the relationship of both library expenditures and number of professional library staff to student persistence. She found "statistically significant relationships exist between professional staff and student retention

within each Carnegie Classification, the strongest relationship between these two variables at doctoral-granting institutions” (Mezick, 2007, pg. 564). Additionally, her findings were supported within the higher education literature; Gansemer-Topf & Schuh's (2006) study published the year before found that academic support expenditures for the library positively contributed to persistence and graduation rates. Furthermore, they too cautioned against the reduced funding that most academic libraries have faced over the last two decades. They explained that since library expenditures contributed significantly to student persistence and increased graduation rates, then reduced funding would likely have negative consequences for student persistence (Gansemer-Topf & Schuh, 2006). This finding was also later supported in Emmons & Wilkinson's (2011) study, which also found that a change in the ratio of librarians to students predicted a statistically significant increase in student persistence and graduation rates.

In 2010, Megan Oakleaf published *The Value of Academic Libraries: A Comprehensive Research Review and Report*, which provided a review of literature on the value of libraries and suggested ways of demonstrating that value, along with providing suggested recommendations for directions library research to take in describing academic library's value in the future. Within the report was an overview of the literature on student persistence and graduation rates; in it she noted that student persistence was a key part of a college and university's mission. Oakleaf (2010) also stated that research on librarian contact with students suggested that these interactions were correlated with student persistence and that lower expenditures on the library were linked to lower persistence rates. She recommended that, "because most librarians are not in positions that enable them to influence students' personal traits" (Oakleaf, 2010, pg. 106), librarians needed to focus on creating environments that promote retention and graduation.

A few years later, Soria, Fransen, & Nackerud's (2013, 2014) article examined student persistence within the context of library value as described by Oakleaf (2010) and how library services might be integrated into campus programming to promote student success. Their studies revealed that first-time, first-year undergraduate students who use the academic library have a higher GPA their first semester and higher retention than non-library users. Their studies also discovered that four types of library resources were significantly associated with students' academic achievement: use of library workstations, use of online databases, use of electronic journals, and checking out books. Additionally, Soria, Fransen, & Nackerud's (2013) study indicated that use of online databases was significantly associated with students' persistence. Both of these studies suggested that there was more to the academic library's impact upon student persistence than just the library's environment: the resources and services (online or physical) had an impact as well.

The origins of the research currently being done on how an academic library contributes to student persistence was born of four areas of inquiry in library and information science: student success (Barkey, 1965; Kramer & Kramer, 1968; Self, 1987; Powell, 1992; Dow, 1998; Mezick, 2007), library performance measures (Hamburg, Ramist, & Bommer, 1972; White, 1977; Zweizig, 1977; Goodall, 1988; Van House, 1989; Childers, 1989), calculating library value (Oakleaf, 2010), and the assessment of institutional outcomes (Allen, 1992; Fraser, McClure, & Leahy, 2002; Gratch-Lindauer, 2002; Kyriillidou, 2002). Current investigation of an academic library's impact on student persistence is now further complicated by the existing persistence models themselves. The large number of variables involved that could affect a student's persistence in college directly, or some other related variable (Bean, 2003) is still often too difficult to pinpoint. Additionally, it may not be a specific variable, but rather multiple variables which have worked together to ultimately impacted a student's decision to persist.

However, today, although our picture is still incomplete; there is evidence that a student's interactions with a librarian, their use of the collection (whether online or physically), attending a library instructional session, or enrolling in a class which effectively incorporates use of the library resources are all positively related to student persistence and success in college (Kramer & Kramer, 1968; Dow, 1998; Kuh & Gonyea, 2003; Soria, Fransen, & Nackerud, 2013). Additionally, the literature now suggests that the library instruction and services are especially key for undergraduate students (Murry, Ireland, & Hackathorn, 2016; Eng & Stadler, 2015). This instructional and service need is further highlighted by findings in the higher education literature that freshmen have the highest rates of attrition (Braxton et. al., 2014). So, it is only logical that academic libraries should target these students by partnering with teaching faculty in order to integrate use of the library into the curriculum and orientation to the university.

Some Examples of Library Services supporting Student Persistence.

What are some library services beyond library instruction that might also support student persistence? In this section are a few example programs and services which could help support student persistence and are grounded in Braxton et. al.'s (2014) revised persistence theory for residential colleges and universities. Note, these are merely suggestions for academic libraries to explore and are by no means meant to be prescriptive. They are intended only to encourage reflection on how an academic library might contribute to student persistence or, from the institutional perspective, contribute to student retention. Finally, because one of the primary reasons for student departure from college is not academic, but social and, often more specifically, financial (Stampen & Cabrera, 1988; Cabrera, Nora, & Castaneda, 1993; Braxton et al., 2014), these examples will focus on how academic libraries might positively impact a student's ability to pay.

Program Recommendations positively impacting a student's Ability to Pay

By helping to remove financial barriers an institution can provide students a greater opportunity for social integration (Stampen & Cabrera, 1988; Cabrera, Nora, & Castaneda; 1993). Braxton et al. (2014) argued that the ability to pay helps to reduce barriers to student participation in the social communities of their college. The academic library does help mitigate many financial challenges students may face already; for instance, computer and software access. There is still a percentage of the student population that does not have a computer at home or may not have extended use of a computer at home or have internet access. The U.S. Census currently estimates that about 25 percent of all households have no paid Internet subscription at all (File & Ryan, 2014).

By providing the access to these tools and the hours in which to use them, the library can help mitigate some of the additional economic challenges of college attendance. The library as a free resource to help level the socioeconomic playing field is an important role of the public library system; this role of the academic library shouldn't change simply because the addition of the word 'academic.'

Text Book Programs.

Book budgets have suffered tremendously over the last several decades and many libraries were forced to sacrifice large portions of their book budgets just to keep many of their key journals. So, the idea of purchasing textbooks out of these much starved book budgets is quite unrealistic for most institutions. However, there are three interesting programs that are working to help alleviate some of the increased financial burden of rising textbooks costs.

The first is an effort at San Jose State University (SJSU), who as a part of the Affordable Learning Solutions (ALS) campaign (ALS, 2014) provide a list of textbooks each semester, which are available to students for free as library ebooks (SJSU Library, 2014). This requires the library to work with faculty to find appropriate ebook resources already in the collection. There are some potential obstacles; for instance, at some institutions the campus bookstore may or may not be a willing partner to find existing texts in use. The best approach, in this case, would be to contact a hand full of select departments about their willingness to participate in a textbook program. This would allow the library to gauge how receptive the faculty might be to the program and to work out any kinks in the process.

A second alternative route, also demonstrated at SJSU, is called the Textbook Alternatives Project. This program awards 5 faculty members with \$1,000 each to replace their traditional textbook with a free or low-cost textbook alternative. These texts are made accessible through variety of platforms; however, most are accessible through the campus' learning management system. Aside from the obvious financial benefit for the students this is a terrific form of outreach to the faculty, and it gets the teaching faculty to think of the library collection and library as a teaching tool as well.

The third program is similar to the SJSU Textbook Alternative Project in many ways. The Open State University of New York (SUNY) Textbooks is an open access textbook publishing initiative established by SUNY libraries and supported by the SUNY Innovative Instruction Technology Grants (SUNY Geneseo Library, 2014). This project provided an editorial framework and service to faculty authors; in turn, the students had access to faculty written titles. Another variation of this project was also done by Paul Royster at the University of Nebraska-Lincoln (UNL), who started publishing full-length faculty monographs in their library repository in 2008 (Royster, 2012). This collection of textbooks was published through UNL's Zea E-Books and Zea Books, which are the digital and print-on-demand publishing operations of the University of Nebraska-Lincoln Libraries (Zea Books, 2014).

Policy Recommendations positively impacting a student's Ability to Pay.

The academic library also plays a significant role in helping to control textbook costs and ideally teaching faculty will seek out these kinds of publishing and textbook cost reduction strategies like at San Jose State University and SUNY Geneseo. However, that is unlikely to happen broadly across the institution and will require careful, deliberate outreach by the library in order to promote the use of these resources. Even then, the decision to use these resources is ultimately up to the teaching faculty.

However, what the library can do in concert with this kind of program development is establish clear, easy, and accessible policies on the use of copyrighted library materials and resources within the library. Many libraries have policies for placing photocopied or scanned images of published copyrighted materials on Course Reserve; however, policies for obtaining

public performance rights may be more difficult to find. Easy to understand policies and guides explaining fair use and copyright help address the needs of scholars and students by preemptively addressing questions they may have about the appropriate use of a particular publication, image, or multimedia resource. For instance, by making these policies and guidelines more accessible the academic library can lower the time costs associated with building a course packet and the difficult decisions associated with whether or not to include a library source.

For example, through San Diego State University (SDSU) library's Electronic Resource Manager (ERM), the library includes "terms of use" for its journals, which are displayed in the library's journal finder (See Figure 1 and 2) and are also included within the catalog for multimedia items. This is done so that faculty can quickly determine whether or not they can easily include these articles on course reserves or in their course packets for students.

Figure 1. Display of searched journal title.

1 record retrieved for the search: Title begins with "International journal of social economics"

 **International journal of social economics** (0306-8293) [View Terms of Use](#)
 from 01/01/1990 to 12/31/2010 in [LOCKSS \(SDSU Electronic Journal Archive\)](#) 1991-1993 unavailable.
 from 1994 to present in [Emerald Management 120](#)
 from 01/01/1996 to 1 year ago in [ABI/INFORM Complete](#)

Figure 2. Details of terms of use in journal finder.

San Diego State University Library: Journal Finder

Journal: International journal of social economics
 ISSN: 0306-8293

Terms of use for:
[Emerald Management 120](#)

Source: [Emerald Management 120](#)
 Coverage Dates: from 1994 to present

Local Terms of Use:

License Term	Permissions
Authorized Users	Faculty, Staff, Students, Walk-Ins
Digitally Copy	Permitted
Print Copy	Permitted
ILL General	Permitted
ILL Secure Electronic	Permitted
Course Reserve	Permitted
Course Pack Print	Permitted

Other Use Restrictions (Staff Note)

[« Back to the Library](#)

Easy access to this copyrighted material is important to faculty and helps aid in the creation of their course materials. However, it also helps lower economic barriers for students who may be making difficult financial decisions based simply on whether or not they can afford the reading materials needed for a required course.

Conclusion

Academic libraries are social institutions and they are a part of the social capital available to their community of users (Kyrillidou, 2002); or to quote White (1977) again, libraries are “quintessentially human operations” (pg. 136). Because the academic library is an environment where both the academic and the social take place on a campus, the academic library's impact on student persistence must be viewed more holistically. As De Jager (2002) suggests, the academic library contributes to the whole student experience through a combination of resources and services.

Because of the broad influence of academic libraries, there is a great opportunity for them to demonstrate their value on issues of student retention and student success beyond just library as place. Libraries have the potential to positively impact student success, not only through connections between the library and the classroom as suggested by Boyer (1989), but also user by user through outreach and library programming (Kyrillidou, 2002) which helps to build social capital for the university community and, in turn, promotes student persistence.

Bibliography

- Allen, N. (1992). Assessment in higher education. *The Reference Librarian*, 17(38), 57-68.
- ALS (2014). Affordable learning solutions website. <http://als.csuprojects.org/home>
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25, 297-308.
- Barkey P. (1965). Pattern's of student use of a college library. *College and Research Libraries*, 26(2), 115-18
- Bean, J.P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*. 12(2), 155-187.
- Bean, J. P. (2003). *College student retention*. J. W. Guthrie Ed., Encyclopedia of Education. New York: Macmillan Reference USA, 401- 407.
- Berger, J.B. & Braxton, J.F. (1998). Revising Tinto's interactionist theory of student departure through theory elaboration: Examining the role of organizational attributes in the persistence process. *Research in Higher Education*, 39(2), 103-119.
- Boyer, E. L. (1989). *College: The undergraduate experience in America*. Harper & Row Publishers: New York: NY.
- Braxton, J.M., Doyle,W. R., Hartley, H.V., Hirschy A.S., Jones, A.J., & McLendon, M.K. (2014). *Rethinking college student retention*. San Francisco, CA: Jossey Bass.
- Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: structural equations modeling test of an integrated model of student retention. *Journal of Higher Education*, 64, 123-139
- Childers, T. (1989). Evaluative research in the library and information field. *Library Trends*, 38(2), 250-267.

- De Jager, K. (2002). Successful students: Does the library make a difference? *Performance Measurement and Metrics* 3(3), 140-144.
- Dow, R. F. (1998). Using assessment criteria to determine library quality. *Journal of Academic Librarianship*, 24(4), 277-281.
- Emmons, M., & Wilkinson, F. C. (2011). "The academic library impact on student persistence." *College & Research Libraries*, 72(2), 128-149
<http://crl.acrl.org/content/72/2/128.full.pdf+html>
- Eng S., & Stadler D. (2015). "Linking library to student retention: A statistical analysis." *Evidence Based Library and Information Practice*, 10(3)
<https://ejournals.library.ualberta.ca/index.php/EBLIP/article/view/24499/18800>
- File, T. & Ryan, C. (2014). *Computer and internet use in the United States: 2013, american community survey reports, ACS-28, U.S. Census Bureau*, Washington, DC.
- Fraser, B. T., McClure, C. R., & Leahy, E. H.(2002). Toward a framework for assessing library and institutional outcomes. *portal: Libraries and the Academy*, 2(4), 505-528.
- Gansemer-Topf, A. M., & Schuh, J. H. (2006). Institutional selectivity and institutional expenditures: Examining organizational factors that contribute to retention and graduation. *Research in Higher Education*, 47(6), 613-642.
- Goodall, D. L. (1988). Performance measurement: a historical perspective. *Journal of Librarianship and Information Science*, 20(2), 128-144.
- Gratch-Lindauer, B. (1998). Defining and measuring the library's impact on campuswide outcomes. *College and Research Libraries*, 59(6), 546 - 570.
- Gratch-Lindauer, B. (2002). Comparing the regional accreditation standards: Outcomes assessment and other trends. *Journal of Academic Librarianship* 28(1/2), 14- 25.
- Hagedorn, L.S. (2005). How to define retention: A new look at an old problem. In A. Seidman (Ed.), *College Student Retention: Formula for Student Success*, 89-105. Westport, CT: Praeger Publishers.
- Hamburg M., Ramist L.E., & Bommer M.R.W. (1972). Library objectives and performance measures and their use in decision making. *The Library Quarterly: Information, Community, Policy*, 42(1), 107-128.
- JBHE. (2003). African-American college students use the campus library more often than their white peers. *The Journal of Blacks in Higher Education*, 41 (Autumn), 42-43.
- Kramer, L. A., & Kramer., M.B. (1968). The College Library and the Drop-Out. *College and Research Libraries* 29(4), 310-12.
- Kuh, G. D., & Gonyea, R. M. (2003). The role of the academic library in promoting student engagement in learning. *Eleventh National Conference Papers of the American College and Research Libraries Division of the American Library Association*.
<http://www.ala.org/acrl/sites/ala.org/acrl/files/content/conferences/pdf/kuh.pdf>
- Kyrillidou, M. (2002). From input to output measures to quality and outcome measures, or, from the user in the life of the library to the library in the life of the user. *Journal of Academic Leadership* 28 (1/2), 42-46.
- Mallinckrodt, B, & Sedlacek W. E. (1987). Student retention and the use of campus facilities by Race. *NASPA Journal*, 24(3), 28-32.
- Mezick, E. M., (2007). "Return on investment: Libraries and student retention." *Journal of Academic Librarianship* 33(5), 561-566.
- Murry A., Ireland A., & Hackathorn J. (2016). "The value of academic libraries: Library services as a predictor of student retention." (PrePrint) *College & Research Libraries*,

- Anticipated Publication Date: September 1, 2016
<http://crl.acrl.org/content/early/2015/11/05/crl15-837.full.pdf+html> 03/10/2016
- Oakleaf, M., (2010). *Value of academic libraries: A comprehensive research review and report*. Association of College and Research Libraries (ACRL).
http://www.ala.org/acrl/sites/ala.org/acrl/files/content/issues/value/val_report.pdf
- Panos, R.J. & Astin, A.W. (1968). Attrition among college students. *American Educational Research Journal*, 5(1), 57-72.
- Powell R. R. (1992). Impact assessment of university libraries: A consideration of issues and research methodologies. *Library and Information Science Research*, 14(3), 245- 257.
- Powell R. R. (1995). Impact assessment of university libraries. *Encyclopedia of Library and Information Science*, 55. New York: Dekker, 151-16
- Royster, P. (2012). Library-led publishing: Books and faculty monographs. Berkeley Electronic Press Sponsored Presentation. Webinar, Thursday, November 8, 2012.
<http://digitalcommons.bepress.com/webinars/30/>
- Self, J. (1987). Reserve readings and student grades: analysis of a case study. *Library and Information Science Research*, 9(1), 29-40.
- SJSU Library (2014). *Textbooks available as eBooks in the library*. SJSU Library Affordable Learning Solutions Website.
<https://library.sjsu.edu/affordable-learning-solutions/textbooks-available-ebooks-library>
- SJSU Library (2014). *Textbook alternatives project*. SJSU Library Affordable Learning Solutions Website.
<https://library.sjsu.edu/affordable-learning-solutions/textbook-alternatives-project>
- Soria, K. , Fransen, J. , & Nackerud, S. (2013). Library use and undergraduate student outcomes: New evidence for students' retention and academic success. *Portal: Libraries and the Academy*, 13(2), 147-164.
- Soria, K. , Fransen, J. , & Nackerud, S. (2014). Stacks, serials, search engines, and students' success: First-year undergraduate students' library use, academic achievement, and retention. *Journal of Academic Librarianship*, 40(1), 84-91.
- Stampen, J. O., & Cabrera, A. F. (1988). The targeting and packaging of student aid and its effect on attrition. *Economic of Education Review*, 7, 29-46.
- SUNY Geneseo Library (2014). *SUNY open textbooks website*. <http://textbooks.opensuny.org/>
- Van House, N.A. (1989). Output measures in libraries. *Library Trends*, 38(2), 268-279.
- White, G T. (1977). Quantitative measures of library effectiveness. *Journal of Academic Librarianship*, 3(3), 128-36.
- Whitmire, E. (2001) The relationship between undergraduates' background characteristics and college experiences and their academic library use. *College and Research Libraries*, 62(6), 528-540.
- Whitmire, E. (2002). Academic library performance measures and undergraduates' library use and educational outcomes. *Library and Information Science Research*. 24(2),107-128.
- Whitmire, E. (2003). Cultural diversity and undergraduates' academic library use. *The Journal of Academic Librarianship*, 29(3), 148-161.
- Zea Books (2014) *Zea E-Books*. University of Nebraska-Lincoln Libraries Digital Commons Website. <http://digitalcommons.unl.edu/zea/>
- Zweizig, D L. (1977). Measuring library use. *Drexel Library Quarterly*, 13(3), 3.