

Students Who Used the Library in Their First Year of University are More Likely to Graduate or Still be Enrolled After Four Years

Soria, K. M., Fransen, J., & Nackerud, S. (2017). The impact of academic library resources on undergraduates' degree completion. *College & Research Libraries*, 78(6), 812–823. <https://doi.org/10.5860/crl.78.6.812>

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Evidence Summary

Students Who Used the Library in Their First Year of University are More Likely to Graduate or Still be Enrolled After Four Years

A Review of:

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Abstract

Objective – The researchers sought to measure the effect of accessing library resources on academic retention and graduation after four years while accounting for external factors that may influence academic outcomes.

Design – Quasi-experimental observational study.

Setting – A large public university in the Midwestern United States of America.

Subjects – 5,368 first-year, non-transfer undergraduates; an entire freshman class.

Methods – Using already collected student and library records data, the researchers grouped the population into those that had accessed one of five library resources at least once (treatment) and those who had not (control). The five treatment variables studied were circulation use, electronic resource or website access, library computer workstation logins, enrollment in open registration or course-embedded library instruction, and use of two reference services (online chat and peer research consultations).

The researchers then performed a series of propensity score matching and regression analyses to compare the treatment and control

groups' outcome measures—graduation or continued enrollment after four years. These statistical models controlled for ten covariate measures that included SAT scores, first generation status, on campus residency, college of enrollment (e.g., business, engineering, education, biological sciences, design, or food, agriculture, and natural sciences), and demographic profiles. The regressions included subset analyses of the treatment group to determine if some treatment variables were associated with better outcomes than others.

Main Results – The researchers found that students in the treatment group ($n = 4,415$) were 1.441 times more likely to graduate and 1.389 times more likely to still be enrolled after four years than those in the control group ($n = 953$). Both results were statistically significant at $p < 0.01$ and $p < 0.001$ respectively. The subset regression analyses revealed that accessing an electronic resource at least once was associated with the best graduation odds at 1.924 times ($p < 0.001$) and the best continued enrollment odds at 1.450 times ($p < 0.001$). Students who had accessed computer workstations and either of the two reference services studied were no more likely to have graduated or still been enrolled after four years than those who had not ($p < 0.001$ and $p < 0.05$).

Conclusion – Accessing library services during the first year of university is associated with improved academic outcomes after four years. More research is needed to accurately measure this impact for methodological reasons. Libraries should document contact with students as much as possible for later assessment.

Commentary

Quantifying the library's impact on student success has continued to grow as a field since Oakleaf's (2010) influential work. Soria, Fransen, and Nackerud (2013, 2014, 2017) are active contributors to this field of study with three previous studies examining the same first-year undergraduate class. The current study represents a departure from the

methodology of these previous works in that it uses propensity score matching in addition to regression analyses following Chiteng Kot and Jones' (2015) study.

For practical reasons, the authors could only include treatment variables that had an accessible paper trail. For example, at their institution students are tracked when registering for information literacy sessions, but not when attending the sessions. Therefore, it is conceivable that some of the treatment group may belong in the control group if they did not actually attend the session. The authors were transparent about what treatment variables entailed, however, and have done an impressive job of gathering and processing variables from as many trackable library activities as they could.

The researchers accounted for factors that would influence students' use of the library and their academic outcome by including ten covariate variables that attempt to create a profile of the student at the time they begin college. As with the treatment variables, the researchers were limited to data sources available, which may not fully capture the external factors that would cause a student to succeed. They acknowledge this possibility in their limitations section and cite academic motivation as a key unmeasured variable. While it is not feasible to account for all possible covariates, their use of propensity score matching allows them to compare the treatment and control groups using the data available.

The researchers used several sensitive data sources for this work that represent serious risk to students' privacy and confidentiality. Presumably it was gathered with the cooperation of university administration since both the covariate measures and the outcome measures would have originated at least in part from the university's registration services, but this was not made explicit. The researchers also did not state whether they had an ethics approval nor how they obtained consent from the population as Glynn (2006) recommends.

Practitioners can make use of this work as an advocacy tool. Although more research is needed before we can confidently claim a causal relationship, this study adds to the growing body of evidence that quantifies the benefits students reap from library use. This study design should be replicated at other institutions as the covariate and treatment variables available will differ. Libraries may want to consider tracking students at more points of contact so they can participate in studies such as these. In particular, the inclusion of in-person reference, use of physical study spaces, and attendance at information literacy sessions would be interesting to study.

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