Evidence Based Library and Information Practice

Evidence Summary

High Self-efficacy and High Use of Electronic Information may Predict Improved Academic Performance

A review of:
Tella, Adeyinka, Adedeji Tella, C. O. Ayeni, and R. O. Omoba. "Self-efficacy and Use of Electronic Information as Predictors of Academic Performance." Electronic Journal of Academic and Special Librarianship 8.2 (2007). 24 Apr. 2008
<http://southernlibrarianship.icaap.org/content/v08n02/tella_a01.html>

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Abstract

Objective – To determine if self-efficacy and use of electronic information jointly predicted academic performance and to determine what information sources students used most often.

Design – Descriptive surveys (scales) for each of the three variables.

Setting – University of Ibadan, Nigeria, a metropolitan, government-supported university with approximately 18,000 students.

Subjects – Seven hundred undergraduate and graduate students randomly chosen from 7 departments of the faculty (i.e., college) of education (100 students from each department).

Methods – Students completed the Morgan-Jinks Self-Efficacy Scale and the Use of Electronic Information Scale. Academic performance was measured using a general aptitude test that covered general education, English language, and mathematics. The Morgan-Jinks scale consisted of 30 items, and the academic performance test consisted of 40 items. No instrument length was provided for the Use of Electronic Information Scale, and no details on the

actual content of the general aptitude test or the Use of Electronic Information Scale were provided. These surveys were completed at the university under conditions similar to that of a typical exam (i.e., no talking). All 700 subjects completed the surveys, and there was no evidence of participants providing informed consent or that they were given an opportunity to withdraw from the study. Data was analyzed using multiple regression analysis, a suitable analysis for this type of data.

Main Results – Self-efficacy and use of electronic information together contributed to 9% (reported as 0.9% in the article) of the variance in academic performance, and each variable statistically significantly contributed to predicting academic performance ($p < 0.05$). Use of electronic information contributed more than did self-efficacy to the prediction of academic performance. The correlations of use of electronic information to high self-efficacy and academic performance to high self-efficacy were very slightly stronger than these variables to low self-efficacy. Use of electronic info and self-efficacy were both statistically significantly correlated to academic performance ($r = 0.2779$ and $r = 0.1559$, respectively), though these correlations were modest. When asked what information source the students used most often, a little more than a third (35.42%) noted the Internet, followed by CD-ROM databases (20.43%), electronic journals (18.71%), and e-mail (18.29%). Electronic books and bulletin boards were used least often (3.71% and 3.43%, respectively).

Conclusion – The original authors conclude that self-efficacy and use of electronic information "predict and influence academic performance" (Discussion ¶ 6). Since use of electronic information is related to greater academic achievement, academic institutions in Africa should strive to provide Internet access in all schools.

Information literacy instruction should become a required course for all students to promote appropriate use of electronic information.

Commentary

Self-efficacy refers to one's perceptions of being successful at a specific task regardless of actual ability. It makes sense to think that an efficacious student might use electronic information more because they believe they can. In part, this study attempted to provide evidence to support the idea that greater use of electronic information leads to better academic outcomes by examining self-efficacy and use of electronic information as predictors of academic success. Unfortunately, the study has several limitations not addressed by the authors, including the use of a self-efficacy scale originally geared to younger students that is not task specific; not providing or referencing the other two scales used in the study, or discussing validation of them; and not detailing the random selection of students. Additionally, the conditions under which the students completed the instruments could have influenced measurements.

The study reports several statistically significant results in relation to the research questions, yet the analyses seem misinterpreted. For example, self-efficacy and use of electronic information jointly contributed 9% of the variance of academic performance. A large amount of variance and thus other contributing factors (91%) remain unaccounted. Both the R^2 and the adjusted R^2 (0.05531) indicate that these data do not represent a good statistical model and thus results should be questioned. Further analyses from the multiple regression are also statistically significant, but they do not appear to be meaningful. Correlation coefficients are in the range of 0.1559 to 0.385, values that do not indicate

strong correlations overall regardless of statistical significance.

This study took place in Nigeria. Admission to institutions of higher education in Nigeria is highly competitive and fraught with controversy (Zurlo 981-86; Okoroma 1-6). Consequently, those students who are admitted could have higher self-efficacy and be higher performers in general, possibly skewing measurements of these variables. Additionally, access to electronic information resources "is still considered a luxury" (Discussion ¶ 5) in Africa, which could potentially impact results on the Use of Electronic Information Scale. Therefore, results from this study, if reliable, would only be generalizable to other institutions facing similar circumstances.

Data presented in this study do not robustly support the claims of the original authors. The authors have extrapolated modest correlations to behavior, and this may not be the case. With weak statistical data and a great deal of variance remaining unaccounted, the conclusions of the original article must be seriously questioned. Because of this, this study is not recommended for making decisions related to library practice and serves as an example of the need to closely examine all variables, instruments, and analysis before incorporating study results into practice.

Works Cited

Okoroma, N. S. "Admission Policies and the Quality of University Education in Nigeria." Educational Research Quarterly 31.3 (2008): 3-24.

Zurlo, John A. "Nigeria." World Education Encyclopedia. Ed. Rebecca Marlow-Ferguson. 3 vols. Detroit: Gale Group, 2002.