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Effects of Information Literacy Skills on Student Writing and Course Performance

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ABSTRACT

This study documents the information literacy skills of college freshmen at a mid-size comprehensive university. It also examines the association between students' information literacy skills and their writing abilities as well as their overall performance in a class. A major finding of the study is that information literacy skills were positively correlated with both student writing scores and final course grades. The findings of this study call for well-integrated library instruction programs and services to improve student information literacy skills.

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Introduction

Developing student critical thinking skills has become essential to the mission of institutions of higher education as employers look for those skills in their new hires. One of the key findings from a national survey of business and nonprofit leaders by the Association of American Colleges and Universities (AAC&U) was 93% of surveyed employers would like their future employees to demonstrate critical thinking, communication and complex problem solving skills, and the business leaders considered these skills more important than a student's major (AAC&U, 2013).

Information literacy (IL) and critical thinking are higher-order intellectual skills required for academic, professional and personal development and success. These two sets of skills share common goals and intersect in many areas. Information literacy includes the ability to locate information, evaluate and use it effectively whereas critical thinking involves the process of exploring and evaluating ideas in order to make a decision or form an opinion on a topic or problem (Wertz et al., 2013). Doyle (1994) stated that "while critical thinking skills provide the theoretical basis for the process, information literacy provides the skills for practical, real world application."

In addition, two similar studies conducted by librarians and faculty members at Oregon State University and Purdue University, suggested

the strong connections between information literacy and critical thinking and writing skills (Deitering & Jameson, 2008; Wertz et al., 2013).

In response to a major priority of the University of North Carolina (UNC) System's five-year strategic plan, "Our Time, Our Future: The UNC Compact with North Carolina," the UNC General Education Council was formed in 2013 and charged with developing general education goals and assessment tools for system's 16 higher education institutions. Two core competencies, critical thinking and written communication skills, were recommended as system-wide fundamental requirements for successful mastery in all academic disciplines (Ortega & Stewart, 2014).

To facilitate the implementation of general education goals and the two core competencies, librarians at Appalachian State University (Appalachian) in North Carolina began seeking ways to improve student information literacy skills and started working with teaching faculty members to assess these skills. Examining the relationship between information literacy skills and student academic performance was one of many initiatives librarians undertook.

During the spring and fall semesters in 2014, librarians at Appalachian conducted a study to document freshmen information literacy skills. The premise of this study is that information literacy skills, as part of critical thinking skills, can be learned through library instruction sessions and when students utilize library resources and services. The findings of this study will help librarians better understand the correlation between student information literacy skills, writing abilities and course grades. The ultimate goal of the study was to improve

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information literacy instruction and library services in order to align library teaching and services more closely with the UNC General Education goals for developing student critical thinking and written communication skills.

This information literacy skills study follows new directions of higher education reforms, which emphasize teaching for understanding and critical thinking rather than information imparting. Librarians have been seeking new ways to help their institution strengthen academic quality, improve access, and increase retention and graduation rates.

Literature review

In the Framework for Information Literacy for Higher Education by the Association of College and Research Libraries (ACRL), information literacy is defined as “the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning” (ACRL, 2015). The ACRL Information Literacy Competency Standards for Higher Education indicated that information literacy competency expands learning beyond formal classroom settings and provides individuals with self-directed investigations as they move into internships, professional positions, and growing responsibilities in all aspects of life. Information literacy forms the basis for lifelong learning, which is essential to the mission of higher education institutions (ACRL, 2000). Information literacy helps develop individuals’ intellectual abilities of reasoning and critical thinking and enables them to learn how to learn (ACRL, 2006).

The International Federation of Library Associations and Institutions (IFLA)’s *Guidelines on informational literacy for lifelong learning*, asserts that information literacy skills are key competencies in lifelong learning. They are the first step toward achieving educational goals. The development of such skills should take place throughout citizens’ lives, and especially during their formative years, when librarians, as part of the learning community and as experts in information management, should assume the key role of facilitating information literacy (Lau, 2006).

By all accounts, becoming information literate is important for individuals to succeed both academically and professionally. In a report entitled *What matters to student success: A review of the literature*, Kuh, Kinzie, Buckley, Bridges, and Kayek (2006) suggested that information literacy is one of the emerging indicators for student success.

The major issue for librarians, however, is to empirically assess the impact of information literacy skills on student success. In this context, the following literature review looks briefly at the methods of assessing information literacy skills and their attempts to gauge the impact of information literacy skills on student academic success in institutions of higher education.

Information literacy assessment

Several studies indicated that writing portfolios and research paper bibliographies are useful tools to evaluate students’ information literacy learning outcomes. The bibliographies proved to be a good representation of student work because they are reliable and understandable to both librarians and teaching faculty. Knight (2006) and Samson (2010) from two different academic libraries, used grading rubrics, which was developed based on the course learning objectives and the ACRL Information Literacy Competency Standards, to evaluate and score the research bibliographies to reflect the student’s level of information literacy.

Scharf, Elliot, Huey, Briller, and Joshi (2007) found a high correlation between the writing scores and information literacy scores, resulting from a writing portfolio study of graduating seniors at the New Jersey Institute of Technology. In addition, a writing project which incorporating information literacy components by White-Farnham and Gardner

(2014) at the University of Wisconsin-Superior, showed an improvement in both student writing and information literacy.

Effects of information literacy instruction on GPAs and retention rates

Several recent studies focusing on the impact of information literacy on the academic performance of students indicated that information literacy instruction and student information literacy skills were positively correlated with the student grade point averages (GPAs), retention and graduation rates.

Vance, Kirk, and Gardner (2012) at Middle Tennessee State University examined the relationship between formal library instruction and student retention rates and grade point average. Two years of student demographic data and library instruction records were used to correlate retention rates and grade point averages among first-year students. Data analysis showed that library instruction had no impact on student retention. However, a statistically significant result indicated that students who had received library instruction had a higher GPA than students who did not. The results imply the existence of positive influence of formal library instruction on student academic achievement.

A similar study took place at the University of Wyoming (Bowles-Terry, 2012) where librarians used a mixed-method approach to determine whether a correlation existed between information literacy instruction and grade point average at graduation. Academic transcript analysis showed a significant relationship between upper-level library instruction and higher GPA at graduation. In a focus group interview, participants mentioned specific skills or resources learned in library instructions sessions were helpful for research assignments throughout their academic careers, supporting the premise that information literacy increases student success.

Effects of library uses on student performance

Some studies also showed that the number of library services and resources students used was correlated with their GPAs and retention rates. Researchers at the University of Minnesota (Soria, Franssen, & Nackerud, 2014) found a positive association between library uses (such as interlibrary loan service, number of check-outs, database access logins) and GPAs as well as student retention rate from first to second semesters. An interesting finding from a study conducted by Kot and Jones (2014) at Georgia State University Library, suggested that those who used library study rooms and attended research clinics had the largest utilization of the library resources, and therefore had a higher first-term GPA.

Zhong and Alexander (2007) and Cherry, Rollins, and Evans (2013) reported that those who utilized library services and resources (e.g., reference service, research assistance, database logins) more frequently had a higher GPA.

Collaboration among librarians and faculty

A recurring theme in the literature regarding successful implementation of information literacy instruction and assessment is the importance of librarians and faculty working together. Knight (2006); Samson (2010), and Scharf et al. (2007) all reported that librarians and faculty jointly developed effective information literacy measurement tools, resulting in significant improvements in the delivery and systematic integration of information literacy skills into the curriculum. Other examples include an initiative at Carleton College (Leebaw, Partlo, & Tompkins, 2013), where librarians solicited the help of faculty in their information literacy in a student writing project or portfolio assessment project. Faculty provided input on the grading rubric design and participated as writing paper readers and graders. This cooperation resulted in a much deeper and richer assessment. This was also the case at Middlesex County College in New Jersey (Thompson, 2013) where

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