Students' perceptions of their information literacy skills: the confidence gap between male and female international graduate students

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ABSTRACT

In the 2015 Summer Session I, the information literacy team combined two instruments, the Information Literacy Assessment (ILA) and the Students' Perceptions of Their Information Literacy Skills Questionnaire (SPIL-Q), into one survey and distributed it to the college's international graduate students through a Google Form. It was distributed to 932 international graduate students, and 172 valid respondents completed the survey. The purpose of this research was to compare the confidence gap in information literacy skills between men and women, particularly in international graduate students. Data collected illustrated that female international business students ($n = 70$) tended to be slightly more confident than their male counterparts ($n = 102$) regarding their perceived information literacy skills as evidenced by their SPIL-Q average score across all six IL topics, 3.78, vs. male student's average score of 3.58.

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INTRODUCTION

Librarians who perform information literacy instruction have a vested interest in examining the factors that impact the effectiveness of their efforts. Students, with their unique skills, attributes, and perceptions, vary in both their ability and willingness to seek out and comprehend information literacy education. It is important for instruction librarians to be able to determine the difference between what students actually know and what they think they know in order to determine how to most effectively teach information literacy (IL) skills (Gustavson & Nall, 2011). Factors such as gender and personality traits may influence students' perceptions of their IL competence (Geffert & Christensen, 1998; Gravil, Compeau, & Marcolin, 2005; Kwon & Song, 2011). As web-based learning and distance education become more prevalent, resulting in potentially limited face-to-face information literacy educational opportunities, students will need to independently identify their own IL needs (Gravil et al., 2005; Gross, 2005) and to seek out assistance.

LITERATURE REVIEW

SELF-ASSESSMENT

Self-assessment of IL skills is one of the more popular methods in determining students' perceptions of their abilities. These self-assessments are often compared to test-assessed skills to determine the accuracy of students' perceptions. For example, Gustavson and Nall (2011) surveyed 377 freshmen (using a Likert scale) at East Carolina University to assess their confidence in performing library research and compared the students' responses to an eight-question skills test. There was no significant correlation between "self-reported confidence level and skills test score" (p. 299). They also considered students' previous library experience and found that those students who received IL instruction in high school or college were overconfident in their research abilities (p. 296). Geffert and Christensen (1998) surveyed 521 incoming college students about their previous experience with libraries, research assignments, and their confidence levels with various research tools and compared the responses to a short knowledge test of IL skills. They also found no statistically significant correlation between students' self-assessment of library skills, their confidence levels, or tested skills. To survey 904 undergraduates at two Australian universities in four different cohorts, Oliver (2008) used a four item tool that measured students' perceived self-efficacy and their ability to locate websites and journals (p. 3). Two of the questions used a ten-point Likert scale to measure self-efficacy, and the other two questions asked students to list up to five steps to find websites and academic or peer-reviewed journal articles. Oliver (2008) noted that while undergraduates "described as the Net Generation have greater confidence in their ability to find websites and journals for academic study" these students are "more confident than they should be" (p. 1). This was consistent with Mahmood's (2013) findings of disparities amongst students' perceptions of various IL skills. In that study, 1414 undergraduate and graduate students completed a questionnaire using a four-point Likert scale to assess their comfort level with twenty information literacy skills. The students indicated higher comfort levels in "basic computer

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skills and using Internet search engines" over using "online indexes and abstracts, advanced searching in databases, and using library OPAC" (p. 235).

Whitmire (2001) studied the concept of self-reported satisfaction with IL skills and progress made throughout students' college careers. She analyzed responses from 643 undergraduates on the school's satisfaction survey which were captured through a computer-assisted telephone interview (p. 411). Students who rated the quality of instruction and courses higher also rated their information literacy skills higher (p. 419). Gender did not appear to be a factor in influencing students' satisfaction with their IL skills (p. 418). Pinto (2012) developed an online tool, the IL-HUMASS survey, which combined a skills self-assessment with reporting of preferred learning habits and belief of importance in various skills. Karim, Din, and Razak (2011) conducted a qualitative study with thirteen students who participated in an information skills program at a Malaysian university. The researchers used a semi-structured interview to determine the students' information skills (p. 3851). They found that a lack of library exposure and motivation may contribute toward students' inability to increase their skills.

Self-assessments of IL skills have been used with working professionals as well. Gravil et al. (2005) recruited sixty-seven volunteers from organizations in the "financial, retail, consulting, and distribution sectors" (p. 382); all had experience using Microsoft Excel. Participants completed a procedural knowledge test and a self-assessment questionnaire measuring their experience with information technology. The researchers found that participants overestimated their knowledge of Microsoft Excel software (p. 385).

POST-TESTS

Few studies incorporate the use of post-tests to examine changes in students' perceptions of the information literacy skills (Lahlafi & Rushton, 2015; Gross & Latham, 2007; Latham & Gross, 2011; Michalak & Rysavy, 2016). In 2007, following the administration of a post-test, Gross and Latham found that students continued to exhibit disparities between their actual skill levels and their own self-estimates of their performance. The authors (2007, p. 334) incorporated the James Madison University's Information Literacy Test, pre- and post- self-assessments of IL ability, and a Library Anxiety Scale (LAS) (Bostick, 1993) in their study of fifty-one freshmen at Florida State University who were from the top and bottom 25% of their class (p. 339).

In 2011, Latham and Gross noted that students who were interviewed following the completion of an IL workshop "reported increased confidence in their information skills" (p.379). They noted some students reported not giving any thought to their abilities prior to the workshop (p. 375).

Michalak and Rysavy (2016) delivered two internally developed survey instruments – the Information Literacy Assessment (ILA) and the Student's Perceptions of Their Information Literacy Skills Questionnaire (SPIL-Q)—to determine graduate students' ($n = 172$) perceptions of the IL skills as compared to their actual performance. Michalak and Rysavy (2016) pointed out that "[d]ata on student perceptions and test results by gender revealed that female students felt more confident than their male counterparts regarding their skills in four of the six topic areas: *Developing a Topic, Evaluating a Topic, Writing, and Citing*" (p. 159).

COMPETENCY THEORY

Researchers have attempted to understand why people are not always able to accurately predict their own abilities. Competency theory, a concept developed by Kruger and Dunning (1999), explains that those who are less competent not only overestimate their abilities but also fail to recognize how their skill level compares to others. This information is particularly relevant to instruction librarians as students who have low IL skills may be less likely to seek out instruction and assistance if they are not able to accurately identify their own skill deficits.

In 2005, Gross explored the effects of competency theory on information literacy. She proposed that information literacy instruction may be affected by inflated self-assessments of student ability. This concept was further investigated in a research study conducted by Latham and Gross in 2011. "First-year community college students with below-proficient information literacy skills" (p. 367) were targeted for an intervention to assist them in increasing their IL skills. The researchers confirmed that individuals with low skill levels were less likely to seek out instruction or assistance as they inaccurately believed they already had the necessary skills. However, they found that the accuracy of the students' perceptions improved following information skills instruction.

SELF-EFFICACY

A more common psychological construct researchers have used to understand factors affecting information literacy perceptions and ability is self-efficacy. Bandura (1977) defined self-efficacy as the belief in one's own abilities to perform tasks and demonstrated that self-efficacy effects what people choose to do, how much effort they put forth, and how they feel doing it (p. 193). Essentially, those with higher self-efficacy will choose to work harder and persist longer on challenging tasks.

Kurbanoglu (2010) concluded that "low self-efficacy beliefs may be a significantly limiting factor for individuals to use their information literacy skills" (p. 4) and accurate measures of self-efficacy can be used to better identify those who may need additional assistance. Serap Kurbanoglu, Akkoyunlu, and Umay (2006) developed a 28-item scale to measure self-efficacy for information literacy skills. They used a Likert scale to measure confidence levels in seven main categories of IL skills: "A. Defining the need for information, B. Initiating the search strategy, C. Locating and accessing the resources, D. Assessing and comprehending the information, E. Interpreting, synthesizing, and using the information, F. Communicating the information, G. Evaluating the product and process." (p. 733). Ren (2000) came to the conclusion that students' self-efficacy in electronic information searching increased significantly following library instruction (p. 327).

GENDER

A review of the limited literature available on the relationship between gender and information literacy produced varied results regarding the influence of gender on individuals' confidence and performance of information skills. Pinto and Pascual (in press) did not discover any significant differences of perceptions of information competencies between male and female students. Mahmood (2013) pointed out in his study of undergraduate and graduate students' perceived IL skills that the level of information skills and gender of students did not appear to be connected. In 2007, Yi explored information needs of international graduate and undergraduate students and found that gender and age did not make a "difference in predicting library use by international students" (p. 669).

However, there are a few studies in which gender appeared to play a role in how students' perceived their information literacy skills. Geffert and Christensen (1998) found a disparity in how male and female students rated their abilities. Female students participating in the study rated their IL skills lower than males despite the fact that females had objective measures of their abilities including higher high school GPAs and better performance on an exam given for the study (p. 284). Gravil et al. (2005) found that men overestimated their abilities while women underestimated theirs. Gustavson and Nall (2011) noted that both male and female freshmen tended to be overconfident in their ability to perform library research as opposed to their performance on a skills test, but female students who rated themselves as not confident underestimated their actual capabilities. Pajares (2002) pointed out that female middle school students initially rated their self-efficacy lower on a new mathematical task than male students, but the ratings leveled out following instruction.