

What They Don't Know CAN Hurt Them: Competency Theory, Library Anxiety, and Student Self-Assessments of Their Information Literacy Skills

Don Latham and Melissa Gross

Introduction

Almost everyone agrees that information literacy skills are crucial if today's students are going to become tomorrow's productive citizens. Indeed, in the information age it is difficult for anyone without adequate information literacy skills to be a full participant in society. The growing emphasis being placed on information literacy skills at institutions of higher education is evident in a number of ways, including the development of the Association of College and Research Libraries' "Information Literacy Competency Standards for Higher Education" (ACRL 2000), the adoption of mandatory information literacy skills assessment by an increasing number of institutions, and even the implementation of required information literacy instruction. But a key challenge remains: how can colleges and universities effectively integrate information literacy instruction into their curricula when many of their students do not recognize that they are lacking in such skills or that they could benefit from such instruction?

This paper reports the results of a project to investigate the relationship between students' performance on

a standardized information literacy test and their own estimates of their information seeking skills, and the possible relationship between level of information literacy skills and level of library anxiety. Competency theory suggests (Kruger and Dunning 1999) that students' skills in any given domain may be associated with their ability to self-assess their skill set, and furthermore, that students who have low-level skills may not, in fact, recognize that they have such a deficit. Information studies theory suggests that information seeking typically begins with a sense of uncertainty (Collins, Mellon, and Young 1987; Kuhlthau 1993). Competency theory, in contrast, predicts that students with a high level of information literacy skills are more likely to question their ability to perform, while students with a low level of skills are more likely to overestimate their ability. As further support for the implications of competency theory, research studies have documented an association between high performing students (in terms of academic achievement and a high level of self-motivation) and the experience of library anxiety (Jiao, Onwuegbuzie, and Lichtenstein 1996; Onwuegbuzie and Jiao 2004). None of these studies, however, examines the possible

Don Latham is Assistant Professor, College of Information, Florida State University, email: latham@ci.fsu.edu; Melissa Gross is Associate Professor, College of Information, Florida State University, email: mgross@ci.fsu.edu.

correlation between level of information literacy skills and level of library anxiety (Gross 2005).

This paper describes a pilot study that measured the information literacy skills of incoming college freshmen, their own self-assessment of their skill level, and the extent to which they experience library anxiety. Specifically, it will address:

1. the relationship between low-level information literacy skills, self-assessments of performance, and library anxiety,
2. the characteristics of students who have low-level or high-level skills sets in information literacy, and
3. the implications of competency theory and library anxiety theory for information literacy instruction.

Methodology

Participants' information-seeking skills were measured using the Information Literacy Test (ILT) developed at James Madison University (JMU n.d.). The ILT measures information literacy skills based on the definition of information literacy developed by the Association of College and Research Libraries (2000). This assessment instrument was chosen because it provides a validated instrument for assessing information literacy skills. Unlike the assessment instrument developed by Project SAILS, the ILT provides assessment at the individual level. And, unlike the Educational Testing Service's ICT Literacy Assessment, the ILT focuses exclusively on information literacy rather than a combination of information and computer literacy.

Library anxiety was measured using the Library Anxiety Scale developed by Bostick to provide a quantitative test of Mellon's (1986) theory of library anxiety (Bostick 1993). In addition to these two tests, two short surveys developed by the researchers were used to collect demographic data, information about how students had developed their information literacy skills, and both pre-test and post-test data on students' self-assessments of how they would perform on the ILT. (The two surveys are included in Appendices A and B.)

Subjects for the study were recruited from Florida State University's incoming freshman class enrolled in the second six-week summer session of 2006. Specifically, students in the top and bottom quartiles (as defined by a combination of high school grade-point average and scores on a standardized admissions test—either the SAT or the ACT) were targeted. The registrar's office provided a list of eligible students based on the defined criteria. Participants were recruited through email solicitations; participation in this research was strictly

voluntary and had no effect on student grades. As an incentive to participate, participants were given a \$20 gift certificate to the university bookstore. As an added incentive to try to perform well on the ILT, participants were told that those who scored in the top 15 percent on the ILT would be entered in a lottery to receive one of four additional \$50 gift certificates.

The ILT, the Library Anxiety Scale, and the two surveys were administered via computer at the university's Academic and Professional Program Services (APPS) Center for Assessment and Testing on campus. Participants were randomly assigned to comparison groups. Half of the participants took the ILT before the Library Anxiety Scale; the other half took the Library Anxiety Scale before taking the ILT. Both groups completed the same short surveys, one survey at the beginning of the session, the other at the end.

Demographics

Fifty-eight students participated in the study. Seven of the participants were under the age of 18, so these participants were deleted from the final data analysis, leaving a total of 51 participants.

Of the 51 participants, 33 (65%) were in the top quartile of their class according to admissions data, while 18 (35%) were in the bottom quartile. There were 37 (72%) females in the study and 14 (27%) males. Forty-nine (96%) participants were 18 years old; two (4%) were 19 years old.

In terms of race/ethnicity, 37 (72%) of the participants were white, six (12%) were Hispanic, five (10%) were black, and one (2%) was Asian, one (2%) was multi-race/multi-ethnic, and one (2%) provided no answer to the question.

The mean high school GPA of participants in the top quartile was 3.967 while that of participants in the bottom quartile was 3.039. The mean ACT (or adjusted SAT) score for those in the top quartile was 26.94; that of those in the bottom quartile was 21.39. Overall, the mean high school GPA for all participants was 3.639, and the mean ACT (or adjusted SAT) score was 24.98.

Information Literacy Skills, Library Anxiety, and Self-assessments

4.1 Information literacy skills

Students in the top quartile of the entering freshman class performed better on the ILT (their mean score was approximately 8 points higher) than their peers in the bottom quartile. The mean scores by quartile are summarized in Table 1.

Table 1: ILT Means and Medians by Quartile

Quartile	N	ILT Mean	ILT Std. Dev.	ILT Median
Top	33	42.15	5.298	42.00
Bottom	18	33.94	6.121	35.50
Total	51	39.25	6.811	39.00

The researchers are confident that most participants gave an honest effort to the tests and surveys. The mean time spent at the testing session was 53.9 minutes, and there was no difference between the means for students in top and bottom quartiles. The amount of time spent at the testing session ranged from 21 minutes to 106 minutes. Interestingly, the two extremes represented students in the bottom quartile.

The developers of the ILT define “proficient” as a score of 39 (out of 60) or higher; a score of 54 or higher is considered “advanced” (Wise, Cameron, Yang, and Davis n.d.). The overall mean score on the ILT was 39.25, just barely within the proficient range. The mean of the top quartile (42.15) falls within the proficient range, while the mean of the bottom quartile (33.94) falls below that range. Only one (1.9%) participant scored in the advanced range, and this student was in the top quartile. Of the 27 (52.9%) students who scored in the proficient range, 23 (45.1%) were in the top quartile, and only four (7.8%) were in the bottom quartile. A total of 23 (45.1%) students scored in the below proficient range. Of these, nine (17.6%) were in the top quartile, and 14 (27.5%) were in the bottom quartile. It should be noted that 77.8 percent of the students in the bottom quartile scored in the below proficient range, while only 27.3 percent of the students in the top quartile scored in this range. Equally significant is the fact that nearly half (45.1%) of the students in the study scored in the non-proficient range. Table 2 summarizes the distribution of ILT scores by proficiency level.

Table 2: ILT Score Distribution by Quartile

ILT Score Range	Top Quartile	Bottom Quartile	Total
54–60 Advanced	1 (1.9%)	0 (0%)	1 (1.9%)
39–53 Proficient	23 (45.1%)	4 (7.8%)	27 (52.9%)
0–38 Non-proficient	9 (17.6%)	14 (27.5%)	23 (45.1%)
Total	33 (64.7%)	18 (35.3%)	51 (100%)

4.2 Library anxiety

The LAS has not been indexed to indicate what a specific score means in terms of level of anxiety, other than with the general stipulation that the higher the LAS score, the higher the level of anxiety. (It is unclear, for example, whether 96 indicates a high or low, acceptable or detrimental level of anxiety). In the study reported here, there was little difference in the mean scores on the LAS between students in the top and bottom quartiles. The top quartile mean was 2.38 points higher than that of the bottom quartile. However, when the one outlier, who scored 158 on the LAS (33 points higher than the next highest score), was removed from the population, the median of the top quartile was only 0.53 points higher than that of the bottom quartile. The mean LAS score among participants in the top quartile was 96.97, while the mean LAS score among those in the bottom quartile was 96.44. The LAS scores of participants in the bottom quartile ranged from 54 to 118, those of participants in the top quartile from 51 to 125 (again, with the outlier removed). In both quartiles scores were fairly evenly distributed.

For students who scored in the proficient or advanced range on the ILT ($n=28$), the mean LAS score was 93.43 ($SD=16.453$). For students who scored in the non-proficient range on the ILT ($n=22$, with the LAS outlier removed), the mean LAS score was 101.05 ($SD=16.842$). An ANOVA test suggests that this does not represent a significant difference between the two means, $F(1, 48)=2.586$, $p=0.114$. Thus, no conclusions can be drawn about library anxiety from the LAS scores obtained in this study. Further research is needed to determine whether there might be a correlation between information literacy skill level and level of library anxiety.

4.3 Self-assessments

Participants in both top and bottom quartiles predicted that they would answer more questions correctly on the ILT than they actually did answer correctly, and overall those in the top quartile predicted scores approximately four points higher than those in the bottom quartile predicted—both in pre-test and post-test surveys. Both groups reported lower post-test predictions as compared to their pre-test predictions (both groups adjusted their predictions downward by approximately 6 points), but they still overestimated their performance, with students in the bottom quartile overestimating their performance considerably more than those in the top quartile. Table 3 summarizes the pre- and post-test predictions by quartile, along with the actual ILT scores.

Table 3: ILT Mean Score Predictions and Mean Actual Scores by Quartile

Quar- tile	N	Pre-test Prediction	Post-test Prediction	Actual ILT Score
Top	33	50.70	45.24	42.15
Bottom	18	47.89	41.39	33.94
Total	51	49.71	43.88	39.25

Similarly, students who scored in the non-proficient range tended to overestimate their information literacy skill level, more so than their counterparts who scored in the proficient range. Both groups predicted higher levels of performance, both before and after taking the ILT, than they actually achieved, although both groups adjusted their post-test predictions downward. Table 4 summarizes the pre- and post-test predictions by proficiency level, along with the actual test scores.

Table 4: ILT Mean Score Predictions and Mean Actual Scores by Proficiency Level

Proficiency Level	N	Pre-test Prediction	Post-test Prediction	Actual ILT Score
Proficient	28	51.11	45.64	44.00
Non- proficient	23	48.00	41.74	33.48
Total	51	49.71	43.88	39.25

Prior to taking the ILT, students in the top quartile predicted that they would score, on average, in the 79th percentile on the test, while students in the bottom quartile predicted that they would score in the 72nd percentile. After taking the ILT test, both groups of students adjusted their predictions downward by an average of 7 to 8 points. Students who scored in the proficient range reported pre-test predictions of scoring in the 82nd percentile, and post-test predictions of the 77th percentile. Students who scored in the non-proficient range offered pre-test predictions of scoring in the 71st percentile and post-test predictions of the 62nd percentile. Again the predictions were much greater than actual performance. The mean score for non-proficient students was 33.48, and their mean percentile rank was 15.7. By comparison, the mean score for proficient students was 43.59, and their mean percentile rank was 70.6.

5. Student Characteristics and Information Literacy

Although the results of this pilot study cannot be generalized to students beyond those who participated in the

study, some interesting characteristics emerge, which can provide insights into students with low levels of information literacy skills.

5.1 Information literacy and overall academic skills

It might be expected that past academic performance, as determined by college-admissions test scores and high school grade point average, would be a positive indicator of performance on a standardized assessment of information literacy skills, and, to a degree, that proved to be the case in this study. Students with a demonstrated record of higher academic achievement tended to score higher on the assessment than did students with lower academic skills levels. Approximately 78 percent of students in the bottom quartile in this study scored in the non-proficient range on the ILT, as compared to approximately 27 percent of students in the top quartile.

However, it should be noted that previous academic performance—especially for top quartile students—was not necessarily a predictor of a high level of information literacy skills. Only one student scored in the advanced range on the ILT, while more than 25 percent of the top-quartile students scored in the non-proficient range. Removing the advanced score from the data, the mean score among the proficient students was only 43.59. Nineteen (70.3%) of the 27 students who scored in the proficient range (again, with the advanced score removed) achieved scores between 39 and 45, which essentially can be considered the low proficient range.

The results of this study further suggest that students with lower overall academic performance also tend to overestimate their information literacy skills, more so than their counterparts with higher overall academic performance. In other words, students with low levels of information literacy skills are unlikely to recognize their deficit.

It should be remembered that all of the students who participated in the study had relatively strong academic credentials, certainly strong enough to gain them entry into a Research I state university with a competitive admissions process.

5.2 Information literacy knowledge

In the pre-test survey, participants were asked how they had learned what they already knew about information literacy. Respondents could select all that applied, and could also stipulate “other” ways they had gained such knowledge. The results are summarized in Table 5.

Thirty-eight (74.5%) participants indicated that at least some of their information literacy knowledge was

Table 5: Sources of Information Literacy Knowledge by Quartile

Source	Freq. Bottom Quar. (% of Quartile)	Freq. Top Quar. (% of Quartile)	Total Frequency (% of Total)
School library media center	6 (33.3%)	17 (51.5%)	23 (45.1%)
Classroom	3 (16.7%)	10 (30.3%)	13 (25.5%)
Parent	6 (33.3%)	9 (27.3%)	15 (29.4%)
Public library	5 (27.8%)	15 (45.5%)	20 (39.2%)
College/university library	4 (22.2%)	8 (24.2%)	12 (23.5%)
Classmate/friend	11 (61.1%)	10 (30.3%)	21 (41.2%)
Myself	14 (77.8%)	24 (72.7%)	38 (74.5%)
Orientation	4 (22.2%)	6 (18.2%)	10 (19.6%)
Other	14 (77.8%)	11 (33.3%)	25 (49.0%)

self-taught. A number of participants indicated that they had gained knowledge through one or more types of libraries: 23 (45.1%) indicated the school library media center, 20 (39.2%) the public library, and 12 (23.5%) the college/university library. That “college/university library” was selected by a fairly small number of participants is not surprising, given that all of the participants in this study were first-semester freshmen, most had been on campus only three weeks at the time the data was collected, and library orientation is not a required part of Freshmen Orientation at Florida State University.

Relatively few indicated that information literacy instruction had been part of a classroom experience outside of a library. Only 13 (25.5%) identified classroom instruction as a source of information literacy knowledge, and only 10 (19.6%) indicated that they had gained such knowledge from their orientation experience at the university.

A number of participants indicated that at least some of their information literacy knowledge had come from friends and parents. Twenty-one (41.2%) stated that they had gained information literacy knowledge from classmates and/or friends, and 15 (29.4%) said that they had been taught by parents.

Although 25 (49.0%) respondents identified at least one “other” source, there was no single predomi-

nant motif although three categories did emerge: computer use/computer class (3=5.9%), working in a school or public library (3=5.9%), and participation in special programs for college students, such as First Year Experience (3=5.9%).

Equally interesting are the differences both between the two quartiles and between the non-proficient and proficient (including advanced) students. Participants in the top quartile tended to get their information literacy knowledge from the school and public library (17=51.5% and 15=45.5%, respectively). About one-third of participants in the top quartile said that they gained their information literacy knowledge in the classroom (10=30.3%). In comparison, students in the bottom quartile were much less likely to identify the school library (6=33.3%), public library (5=27.8%), or

classroom (3=16.7%) as a source of their information literacy knowledge. On the other hand, they were much more likely to identify a classmate or friend as a source of their information literacy knowledge (11=61.1%, as compared to only 10=30.3% for the top quartile). Both bottom and top quartile students overwhelmingly identified themselves as sources of their information literacy knowledge (14=77.8% for the bottom, 24=72.7% for the top).

When considered in terms of proficiency level on the ILT (with proficient and advanced being combined and identified as “proficient” below), these trends continue. Proficient students were more likely to identify the school library (15=53.6%), the public library (12=42.9%), and the classroom (10=35.7%) as sources of their information literacy knowledge. Non-proficient students were less likely to identify the school library (8=34.8%), the public library (8=34.8%), and the classroom (3=13.0%) as sources of their information literacy knowledge. By the same token, non-proficient students were much more likely than the proficient students to identify a classmate or friend as a source (14=60.9%, as compared to only 7=25.0%). Both non-proficient and proficient students identified themselves as sources of their knowledge (18=78.3% for the non-proficient, 20=71.4% for the proficient). The results are summarized in Table 6.

Table 6: Sources of Information Literacy Knowledge by Proficiency Level

Source	Freq. Non-proficient (% of Non-prof.)	Freq. Proficient & Advanced (% of Prof. & Adv.)	Total Frequency (% of Total)
School library media center	8 (34.8%)	15 (53.6%)	23 (45.1%)
Classroom	3 (13.0%)	10 (35.7%)	13 (25.5%)
Parent	8 (34.8%)	7 (25.0%)	14 (28.0%)
Public library	8 (34.8%)	12 (42.9%)	20 (39.2%)
College/university library	6 (26.1%)	6 (21.4%)	12 (23.5%)
Classmate/friend	14 (60.9%)	7 (25.0%)	20 (41.2%)
Myself	18 (78.3%)	20 (71.4%)	37 (74.5%)
Orientation	5 (21.7%)	5 (17.9%)	10 (19.6%)
Other	12 (52.2%)	13 (46.4%)	25 (49.0%)

The fact that many of the students in this study see themselves as a source of their own information literacy knowledge has several implications. On the one hand, it may indicate their recognition that they are the primary agents in creating their own knowledge. On the other, when coupled with the fact that all students tended to overestimate their information literacy skill levels, it may be seen as yet another indication that students consider themselves to be more capable than they actually are. And, as this study shows, such overestimations of skill level are particularly problematic for non-proficient students.

6. Competency Theory, Library Anxiety, and Information Literacy Instruction

This study produced no conclusive results concerning a possible relationship between information literacy skill level and level of library anxiety. Additional research is needed to determine whether such a relationship might exist.

The results of the study did support the main tenet of competency theory, namely that students with low skill levels in a particular domain are likely to greatly overestimate their skill level, both in relation to their peers and in relation to some overall standard. The non-proficient students in this study overestimated their performance

on the ILT, both overall and in relation to that of their peers. Such overestimations of information literacy skills among those who in actuality demonstrate low skill levels clearly have implications for the way information literacy instruction is developed, marketed, and delivered.

6.1 Standardized assessment of information literacy

Some colleges and universities are now assessing the information literacy skills of all incoming freshmen. The fact that proficient and non-proficient participants adjusted their performance estimates downward by about six points after taking the ILT indicates that the experience itself of completing a standardized as-

essment can help students to more accurately calibrate their skill levels. Immediate feedback on such assessments could help students identify their strengths and weaknesses in particular areas and thus recognize the areas in which they need remediation.

6.2 Information literacy instruction

A smaller proportion of students in the initial bottom quartile and in the non-proficient range of the ILT indicated that their information literacy knowledge had come from school and/or public libraries. Further research is needed in order to understand the relationship between library instruction and information literacy skill level. However, this study suggests that those students who did receive instruction—in whatever form—in a library setting were more likely to score in the proficient range on the ILT.

Although many college and university libraries offer information literacy classes and workshops, relatively few require anything more than a one- or two-hour mandatory workshop, if that. The findings of this study, preliminary as they admittedly are, indicate that library instruction can have a positive effect on information literacy skills—but it also indicates that a significant proportion (perhaps as many as 50%) of incoming freshmen are not proficient in information literacy. These findings

would appear to argue for mandatory information literacy instruction. Future research is needed to determine the appropriate length and format of such instruction.

Finally, a much greater proportion of the non-proficient students in this study indicated that their information literacy knowledge came from classmates and friends. This, of course, raises questions about how accurate and useful this knowledge really is, especially since competency theory suggests that those with low skills often have difficulty recognizing expertise in others (Kruger and Dunning 1999). But it also indicates a means by which these students perhaps prefer to construct knowledge. Information literacy instruction perhaps should be developed that makes use of collaborative learning and peer feedback. Again, additional research is needed to determine how best to facilitate this kind of instruction.

Finally, it seems likely that many millennials will prefer instruction delivered through innovative uses of new technology, such as podcasting and simulations. Future research should investigate which technologies are preferred and which are most effective in strengthening various information literacy skills.

6.3 Distance learning students

This study did not include distance learners. However, it should be acknowledged that distance learning presents its own challenges that can make identifying students with low-level information literacy skills even more difficult. To compound the problem, instructors may assume, erroneously, that students in online courses have strong information literacy skills because they have strong computer literacy skills. In fact, these are different skill sets, and students in online courses may very well be deficient in information literacy skills. Non-proficient students are unlikely to recognize that they need remediation, and those who do may be less likely to self identify because they may assume, rightly or wrongly, that interactive help and remediation are not available to them because they are studying at a distance. Clearly, research must be devoted to this particular group of students as distance learning proliferates.

7. Conclusion

This study investigated the applicability of Competency Theory in the domain of information literacy skills among incoming college freshmen. Results indicated that non-proficient students do greatly overestimate their information literacy skills, more so than their proficient counterparts. No clear relation-

ship was seen between information literacy skills and library anxiety.

More research is needed to determine whether these findings prove to be consistent in larger groups of incoming college freshmen as well as in other populations, such as middle school and high school students, adults, and senior adults. Additional research can also help to identify the best ways to develop and market information literacy instruction to people with low skill levels.

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9. References

- Association of College and Research Libraries. 2000. *Information literacy competency standards for higher education*. Chicago: Association of College and Research Libraries.
- Bostick, S. L. 1993. "The Development and Validation of the Library Anxiety Scale." In *Research in Reference Effectiveness*, eds. M. E. Murfin and J. B. Whitlatch, 1-7. Chicago: American Library Association.
- Collins, B. L., C. A. Mellon, and S.B. Young. 1987. "The Needs and Feelings of Beginning Researchers." In *Bibliographic Instruction: The Second Generation*, ed. C. A. Mellon, 73-84. Littleton, Colo.: Libraries Unlimited, Inc.
- Gross, M. 2005. "The Impact of Low-level Skills on Information Seeking Behavior: Implications of Competency Theory for Research and Practice." *Reference and User Services Quarterly* 45: 54-62.
- James Madison University. n.d. Information Literacy Test (ILT). http://www.jmu.edu/assessment/wm_library/ILT.pdf.
- Jiao, Q. G., A. Onwuegbuzie, and A. A. Lichtenstein. 1996. "Library Anxiety: Characteristics of 'At Risk' College Students." *Library & Information Science Research* 18: 151-63.
- Kuhlthau, C. C. 1993. *Seeking Meaning: A Process Approach to Library and Information Services*. Norwood, N.J.: Ablex Publishing.
- Kruger, J., and D. Dunning. 1999. "Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-assessments." *Journal of Personality and Social Psychology* 77: 1121-34.

- Mellon, C. A. 1986. "Library Anxiety: A Grounded Theory and Its Development." *College & Research Libraries* 47: 160–65.
- Onwuegbuzie, A. J., and Q. G. Jiao. 2004. "Information Search Performance and Research Achievement: An Empirical Test of the Anxiety-expectation Mediation Model of Library Anxiety." *Journal of the American Society for Information Science and Technology* 55: 41–54.
- Wise, S. L., L. Cameron, S. Yang, and S. Davis. n.d. "Information Literacy Test," *Test Development and Administration Manual*. James Madison University.

Appendix A

Pre ILT Survey Questions

1. What is your age?
2. What is your gender (male or female)?
3. Please choose the race category below that best describes you.
 1. White
 2. Black
 3. Asian
 4. American Indian
 5. Hispanic
 6. Native Hawaiian/Other Pacific
 7. Multi-race/Ethnic
4. How have you learned what you know about using the library or how to find information? (You may choose more than one answer.)
 1. library instruction in the school library media center
 2. library instruction in the classroom
 3. helped by a parent
 4. helped by librarian in a public library (includes library tour or group instruction)
 5. helped by a librarian in a college or university library (includes library tour or group instruction)
 6. helped by a classmate or friend
 7. taught myself
 8. library instruction provided during FSU orientation
5. Please describe any other ways that you have learned to use the library or to find information.
6. Please estimate how well you think you will perform on the Information Literacy Test in terms of the percent of questions you expect to be able to answer correctly (for example: 100% would be a perfect score; 75% means that you would get 75% of the questions right; etc.). Enter your estimate in the box below.
7. The Information Literacy Test asks you to respond to 65 questions. Please estimate how many of these questions you think you will be able to answer correctly. (For example do you expect to get a score of 34 out of 65? 54 out of 65? A perfect score of 65 out of 65?) Please enter your estimated score in the box below.
8. Using percentages again, please estimate how you think your performance on the Information Literacy Test will compare to other incoming freshmen taking this test. (For example an estimate of 80% means that you think 20% of the students will score higher than you.) Enter your estimate in the box below.

Appendix B

Post ILT Survey questions

1. Now that you have taken the Information Literacy Test, please estimate how well you think you performed in terms of the percent of questions you answered correctly (for example: 100% would be a perfect score; 75% means that you would get 75% of the questions right; etc.). Enter your estimate in the box below.
2. You responded to 65 questions on the Information Literacy Test. Please estimate how many of these questions you think you were able to answer correctly. (For example do you think you received a score of 34 out of 65? 54 out of 65? A perfect score of 65 out of 65?) Please enter your estimated score in the box below.
3. Now that you have taken the Information Literacy Test, please estimate, using percentages, how you think your performance on the Information Literacy Test will compare to that of other incoming freshmen taking this test (for example an estimate of 80% means that you think 20% will score higher than you). Enter your estimate in the box below.