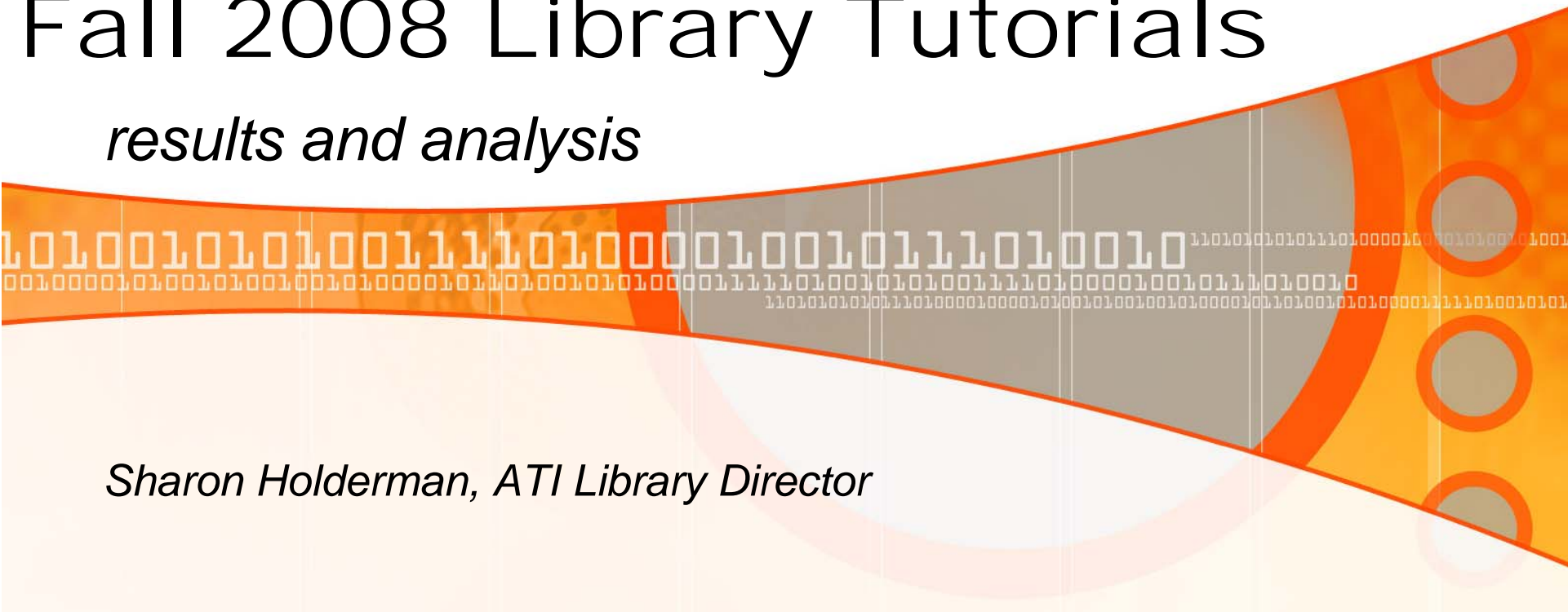


Fall 2008 Library Tutorials

results and analysis

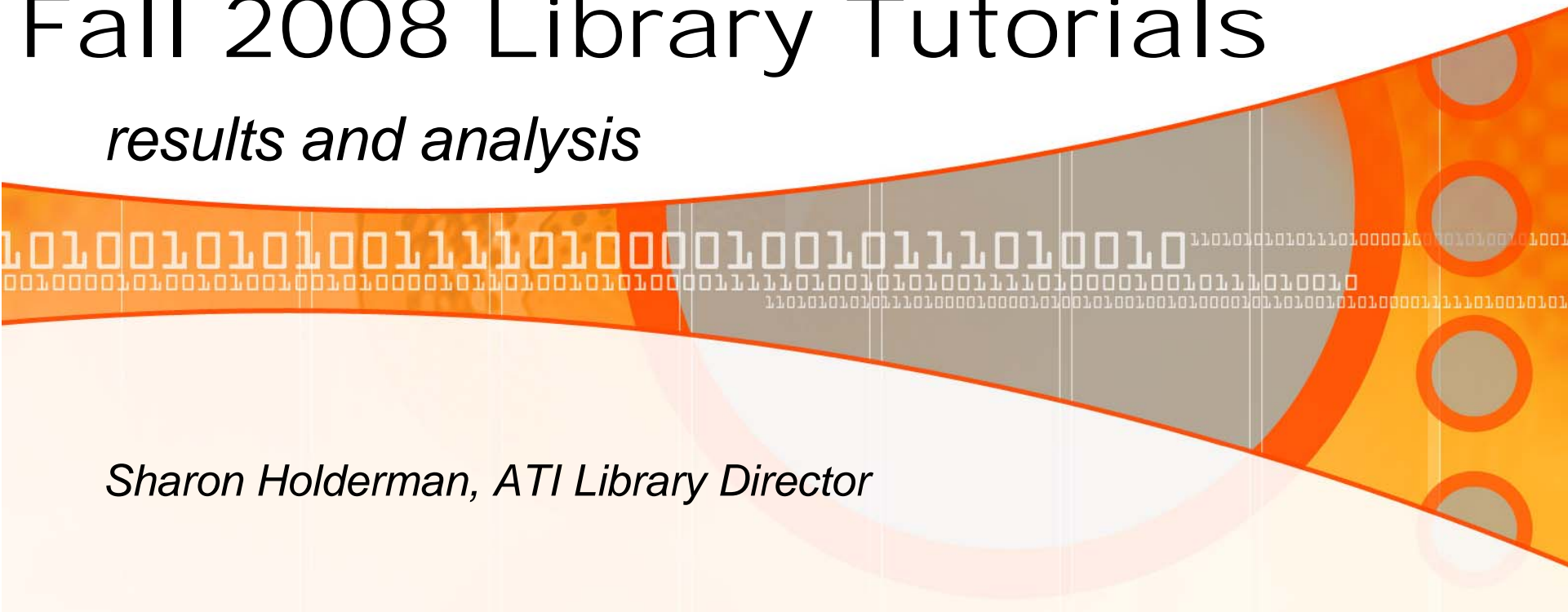
Sharon Holderman, ATI Library Director



Fall 2008 Library Tutorials

results and analysis

Sharon Holderman, ATI Library Director



Fall 2008 Library Tutorials

results and analysis

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Setup Overview

- *pretest (29 questions)*
- *6 tutorials*
 - *Tutorial 1: Types of sources & reliability (9 minutes)*
 - *Tutorial 2: General search processes & tips (7 minutes)*
 - *Tutorial 3: Finding a book (11 minutes)*
 - *Tutorial 4: Searching an online periodical database (13 minutes)*
 - *Tutorial 5: Internet sources and searching (20 minutes)*
 - *Tutorial 6: Copyright & plagiarism (8 minutes)*
- *6 post-quizzes (5 questions each)*

Course Requirements

- *required of orientation courses FAES100 and T201*
 - *students took pretest and all six tutorials with corresponding post-quizzes*
 - *faculty encouraged to use post-quiz scores in course grade*
 - *listed on syllabus as a class day*
- *ENR201 (Introduction to Environmental Science)*
 - *students were not required to take the pretest*
 - *students did only tutorial 4 (searching an online periodical database) and tutorial 6 (copyright & plagiarism) with the corresponding post-quizzes*
 - *many students were also enrolled in FAES100 or T201; those students had to fulfill the orientation requirements listed above*
 - *quiz grades used as part of course grade*

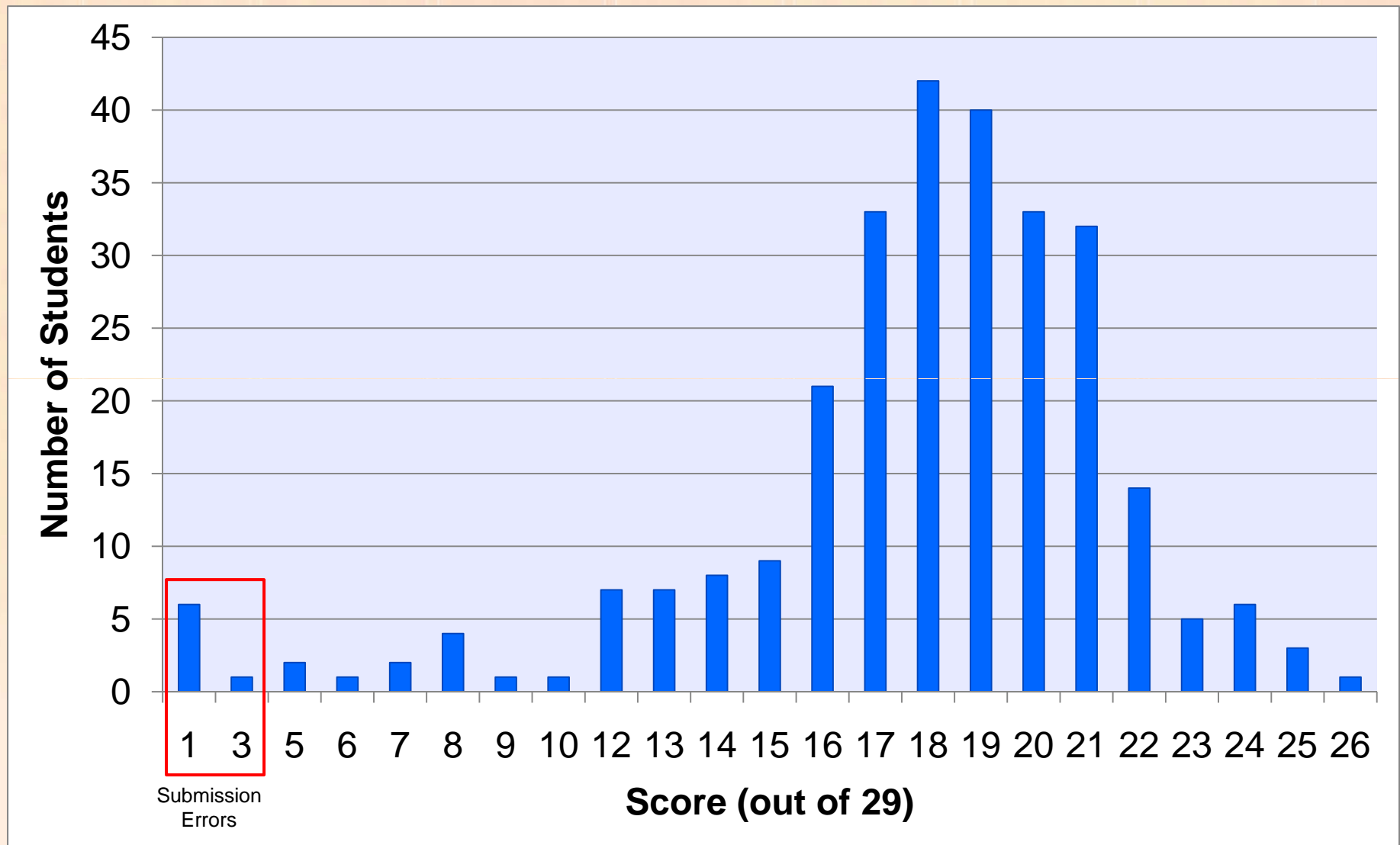
Pretest Results

The pretest is intended to measure students' level of knowledge upon entering ATI. These students, on average, have not previously had any ATI library instruction or the tutorials.

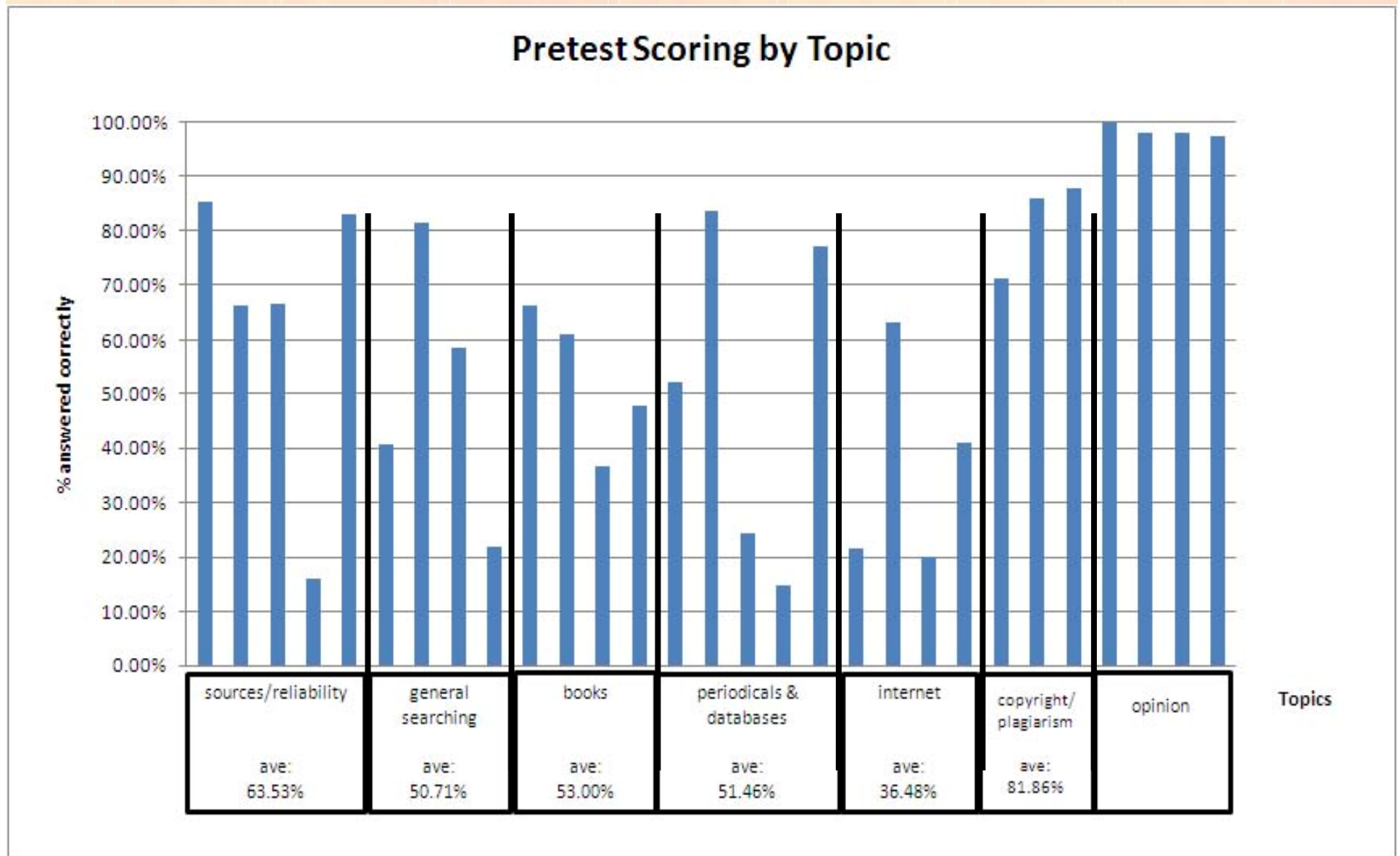
- **average score = 61.68%**
 - *The actual average score was 60.87%, but it was altered due to student error. Seven students, instead of clicking the arrow for the next question, clicked “submit” in the beginning of the quiz. That does not submit the question but the entire quiz. This confusion is evident by the students who only scored 1-3 out of 29 because 4 of the questions were opinion questions with no wrong answer. Therefore, those 7 student scores were removed from the average. It is possible more students made this error later in the pretest, but there is no way to verify this.*
- **total students completing the pretest: 280**
 - *Completion rate of 81%. Total 347 orientation students enrolled in the tutorials.*
 - *The 280 completions includes the seven students who incorrectly submitted the quiz as described above.*



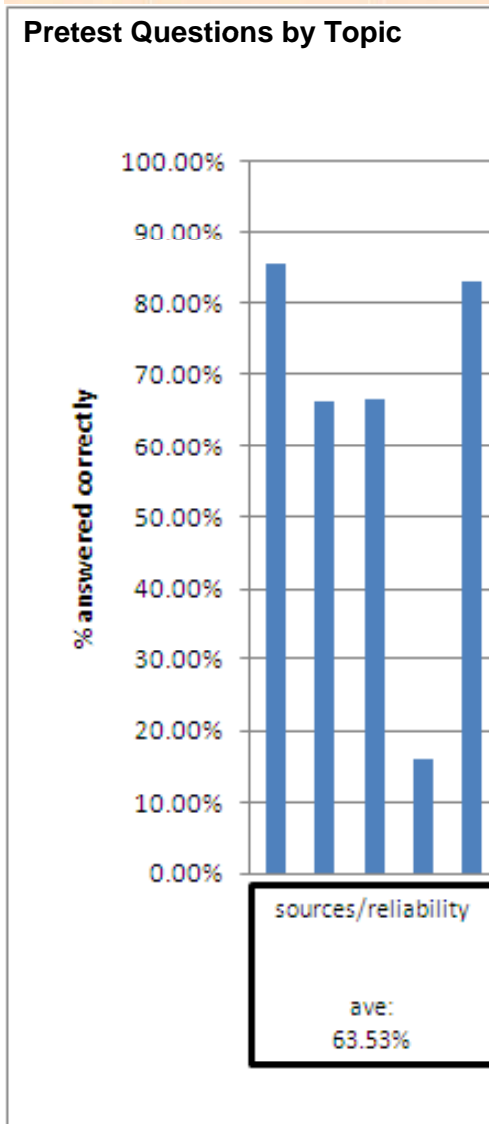
Pretest Score Frequencies



Pretest Averages by Topic



Sources & Reliability Topic

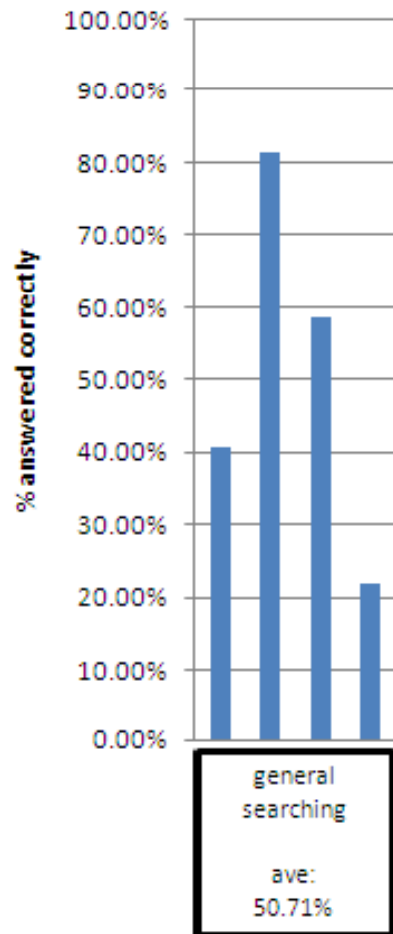


The pretest scores on sources and reliability scored an average of 63.53%.

- Most students know which sources give the most recent information (85.51%).
- 66.78% of students understand the purpose of reference books.
- 66.43% know the best resource for background information.
- There is one extremely low-scoring question about the most important characteristic of a source. Only 15.90% of students answered it correctly. The average score on this topic without counting the low-scoring question is 75.44%. This suggests this single question, which addresses the most important characteristics of a resource, may be problematic in its structure and should be altered for Fall 2009.
- Most students understand what to review when evaluating a source (83.04%).

General Searching Topic

Pretest Questions by Topic

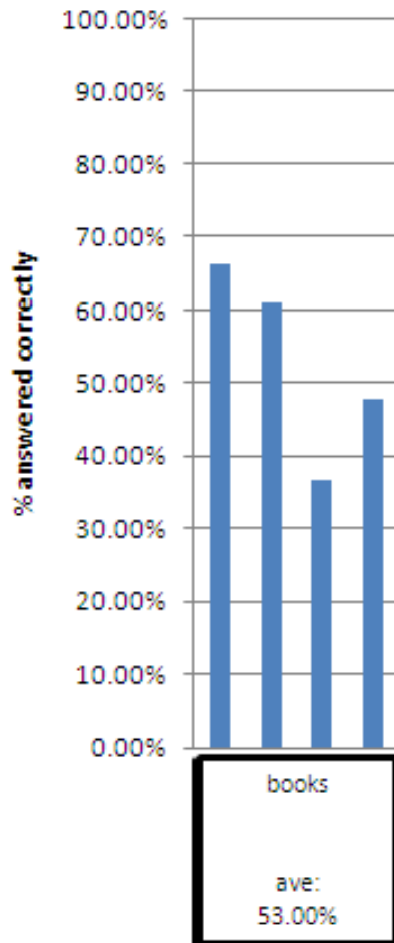


The pretest scores on this topic are mixed, with an average of 50.71%.

- The two lowest-scoring questions (40.64% and 21.91%) are both related to formulating search strategies while combining terms. This suggests that there is a strong need for clear instruction on formulating search strategies and combining terms with Boolean operators.
- The high-scoring question (81.63%) is about phrase searching with quotation marks, a search strategy that is also used in Google. This suggests that students may better understand search strategies they use in Google. This relationship between search tips and Google may be useful as a teaching tool to help students understand library searching.
- 58.66% of students know what an asterisk (*) will do in a search. The question did not use the term truncation to avoid terminology confusion.

Books Topic

Pretest Questions by Topic

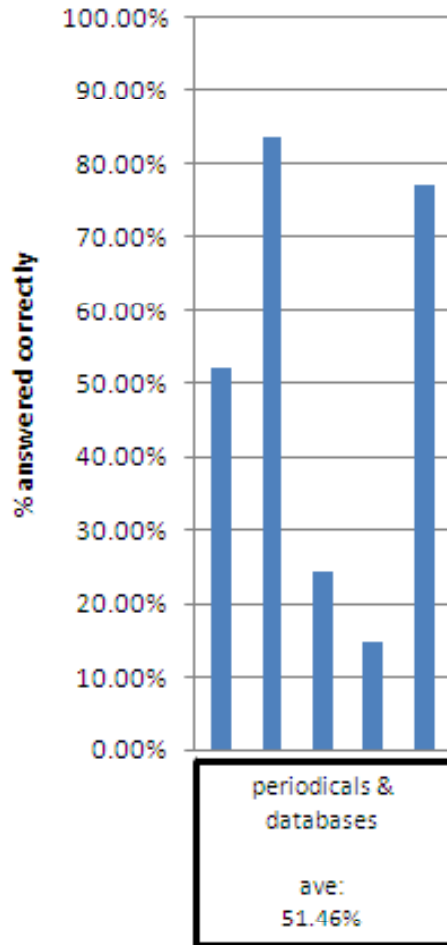


The pretest scores on this topic averaged 53.00%.

- The two higher-scoring questions (66.43% and 61.13%) were about OhioLINK and locating call numbers.
- The lowest-scoring question (36.75%) is about how to use the index to find topics in the book. The question offered an “all of the above” option, which may have confused students since it was the most frequently chosen (56%). This question will be altered for Fall 2009 to better test students’ knowledge of this topic.
- The question averaging 47.70% addressed using LC call numbers to browse. 44% of students think LC call numbers arranges books by author. Fiction books are arranged by author, so this distinction should be stressed in instruction. This question may also need altered to help eliminate the confusion between fiction and nonfiction.

Periodicals & Databases Topic

Pretest Questions by Topic

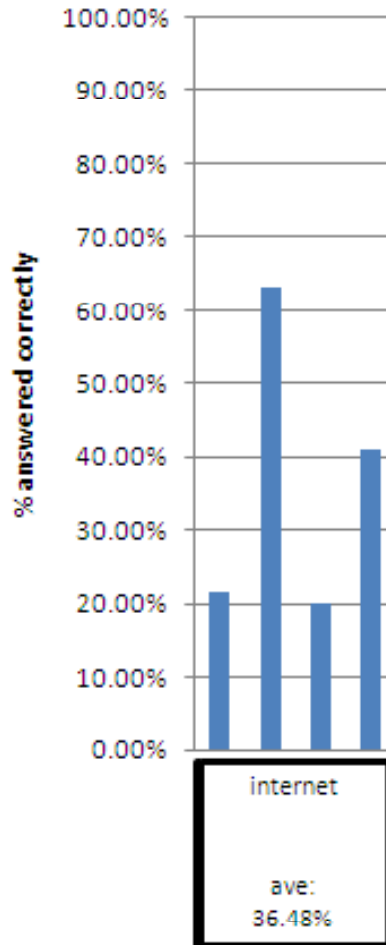


The pretest scores on this topic cover a wide range, with an average of 51.46%.

- 52.30% of students understand how to narrow a search. The correct answer to this question was “all of the above” so those who missed the answer still chose an option that would narrow their search in some way. This question may be changed for Fall 2009 to better test students’ knowledge of narrowing their search.
- The highest-scoring question (83.75%) and the lowest-scoring question (14.84%) both address scholarly journals. This suggests that students can pick the most scholarly journal out of a list of three, but they do not understand WHY they are scholarly. This needs to be addressed in instruction.
- Students were tested on search strategies/Boolean operators within databases, and they scored low (24.38%). This reiterates the need for instruction in this area as demonstrated from the general searching topic pretest questions.
- Most students know what an abstract is (77.03%).

Internet Topic

Pretest Questions by Topic

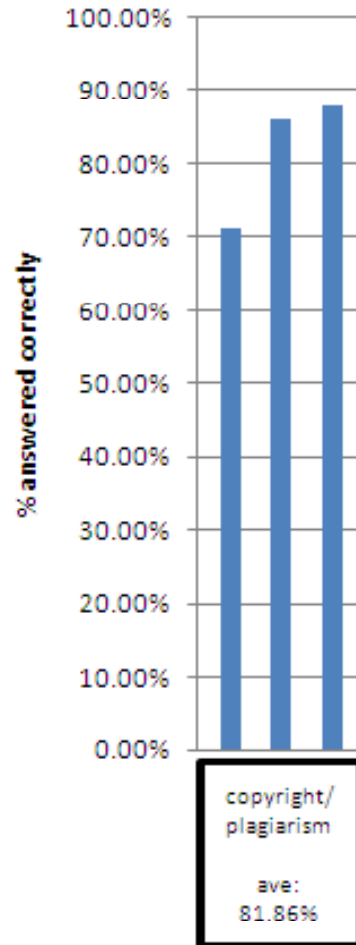


The pretest scores on this topic are the lowest of all the topics at 36.48%.

- Students were tested on using blogs/wikis for research (21.55%). These sites cause confusion because they can be used to find other sources, but not as cited works. This must be stressed through instruction. The question may need reworded to clarify how those sites would be used.
- 63.25% of students know what a wiki is. The most popular incorrect answer was “online encyclopedia”.
- The lowest-scoring question of this topic (20.14%) addressed whether search engines search the entire internet. This shows an imperative need to teach students that search engines do not search library databases, newspaper archives, etc.
- One question (40.99%), using the symbol and term, addressed truncation in a search engine. The question may be problematic because the question asks students to “choose all that apply”, and they had to choose two answers to get it right.

Copyright & Plagiarism Topic

Pretest Questions by Topic

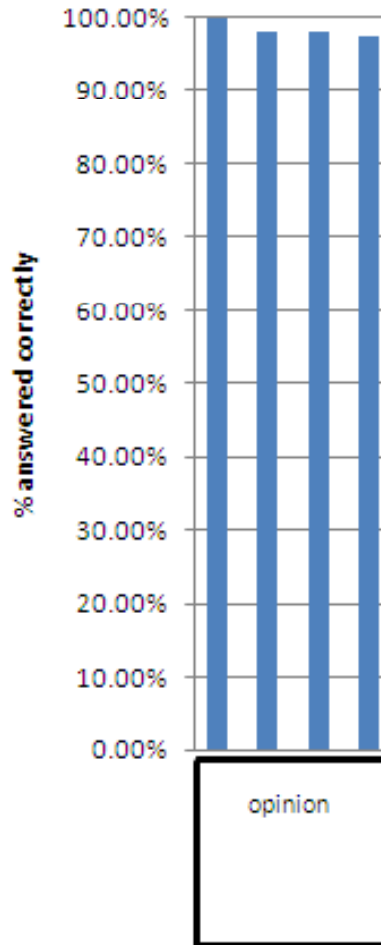


The pretest scores on this topic are the highest at 81.86%.

- The lowest-scoring question in this topic (71.38%) is a yes or no question about copyright issues surrounding the use of pictures found online.
- 86.22% of students know they can use others' material in research paper as long as they cite the source.
- Most students (87.99%) know what actions constitute plagiarism. This answer was "all of the above", so the question may need to be reworded to better test students' understanding of less obvious plagiarism actions like paraphrasing.

Opinions Topic

Pretest Questions by Topic



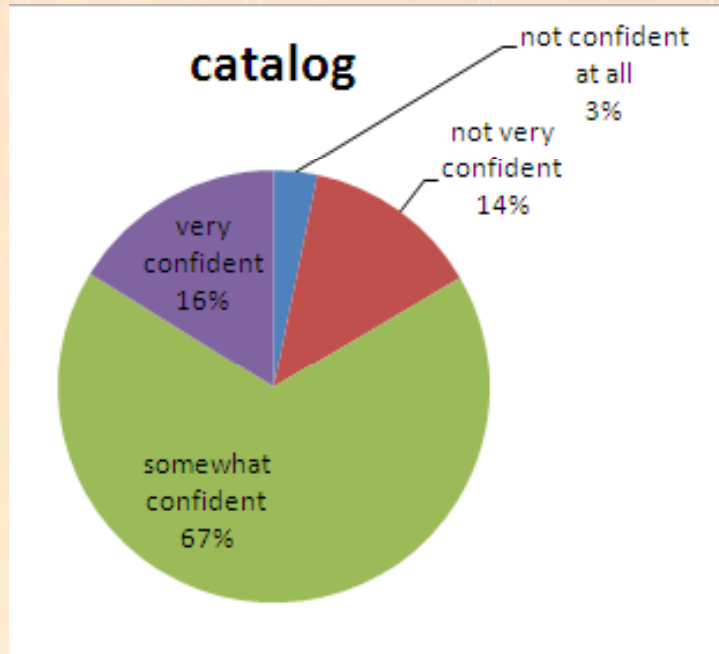
There were four questions asked that had no wrong answers. The reason not all questions register as 100% is due to the student submission errors discussed on slide 4, Pretest Results.

- *If they have taken the tutorials before.* This question helps ensure they have not taken the tutorials before the pretest.

Students were asked three questions about their confidence levels regarding various search environments. Confidence levels are important because often if students are confident and think they know how to do something, they do not value/absorb instruction.

- *Their confidence in using the library catalog.*
- *Their confidence in using library databases.*
- *Their confidence in using the internet for reliable information.*

Catalog Opinion Topic

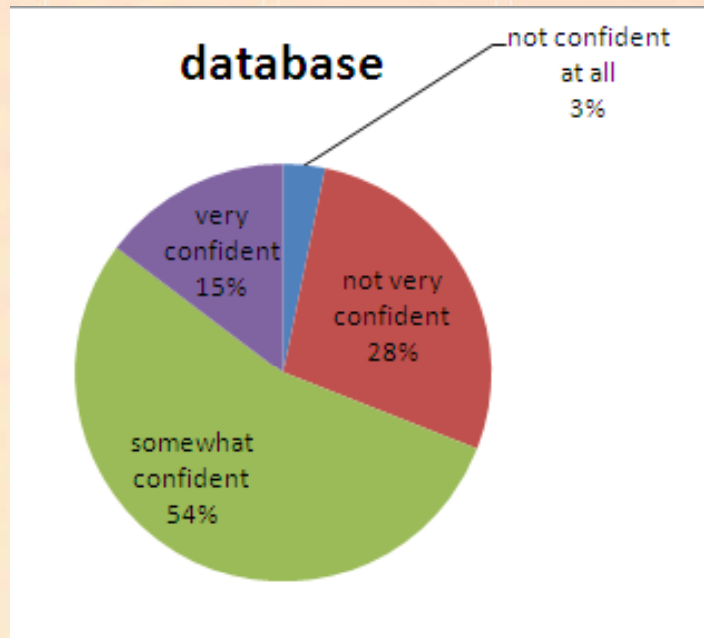


Their confidence in using the library catalog:

- 83% of students are somewhat or very confident using the library catalog.
- 17% are not very confident or not confident at all.

This suggests that most students have some experience and knowledge searching library catalogs. Since most are somewhat confident, students may be ready to use more advanced techniques to make them very confident.

Database Opinion Topic

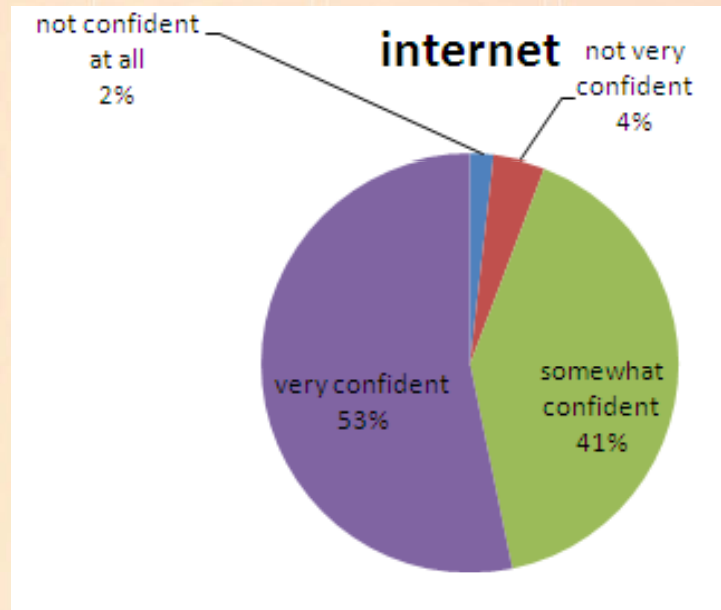


Their confidence in using library databases:

- 69% of students are very or somewhat confident searching library databases.
- 31% of students are not very confident or not confident at all.

This is the area with the lowest confidence rate. This suggests a need for instructing databases in a way that increases confidence. This is where relating search tips to Google may be helpful.

Internet Opinion Topic



Their confidence in using the internet to find reliable information:

- 94% of students are very or somewhat confident searching the internet for valuable information.
- Only 6% are not very confident or not confident at all.

The extremely high confidence rates are very important to note. Since students think they can successfully search the internet for reliable information, they will be more prone to ignore instruction about internet searching. Therefore, instruction with hands-on activities and advanced search tips might be better received.

It is also noteworthy that of all the topics on the pretest, students averaged lowest on questions related to the internet.

Pretest Summary

The pretest indicates a baseline of what information literacy skills students may have as they enter ATI as well as a quick survey of what they skills they think they have.

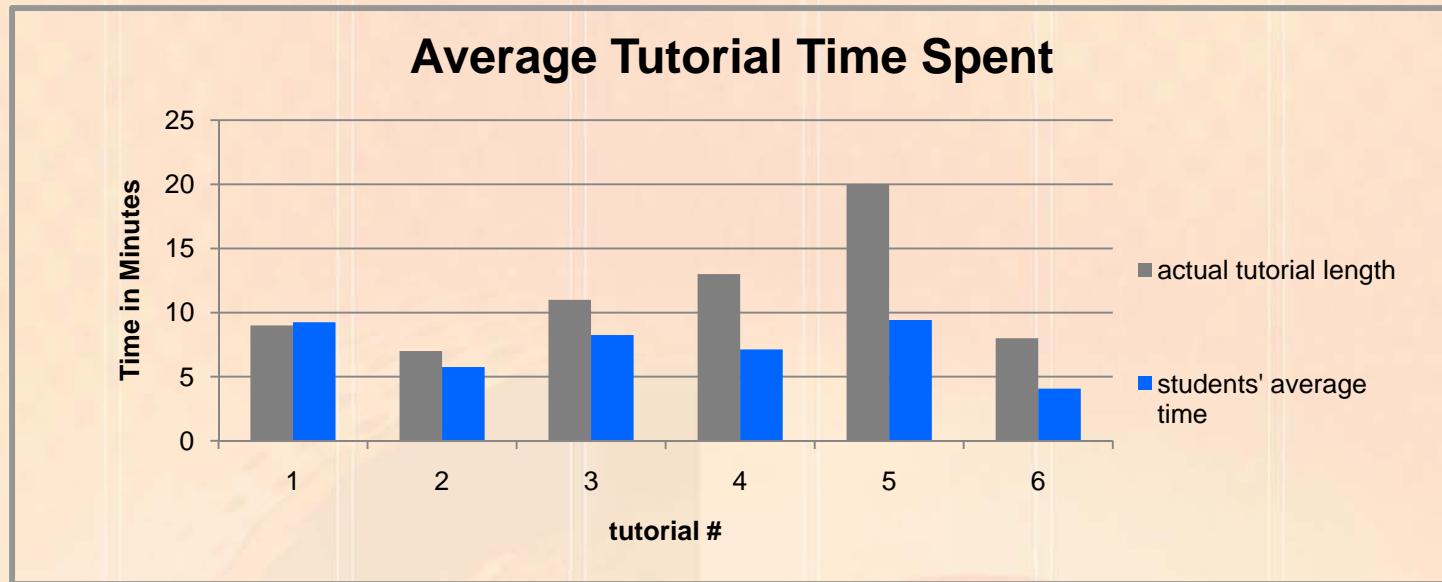
The pretest results from Fall 2008 will help formulate tutorials and future assessment questions to better serve students.

These test scores were not given to instructors to use in their courses because the pretest is for measuring students' pre-tutorial and pre-college knowledge. It is not fair to grade them on information they have not yet been required to learn.



Tutorials

It is important to note the average time spent on tutorials in the chart below. In Carmen, students cannot take the post-quiz until they OPEN the tutorial. This does not require they complete it but simply open the link.



The chart shows that except for Tutorial 1, the average time spent on each tutorial was less than the actual tutorial length.

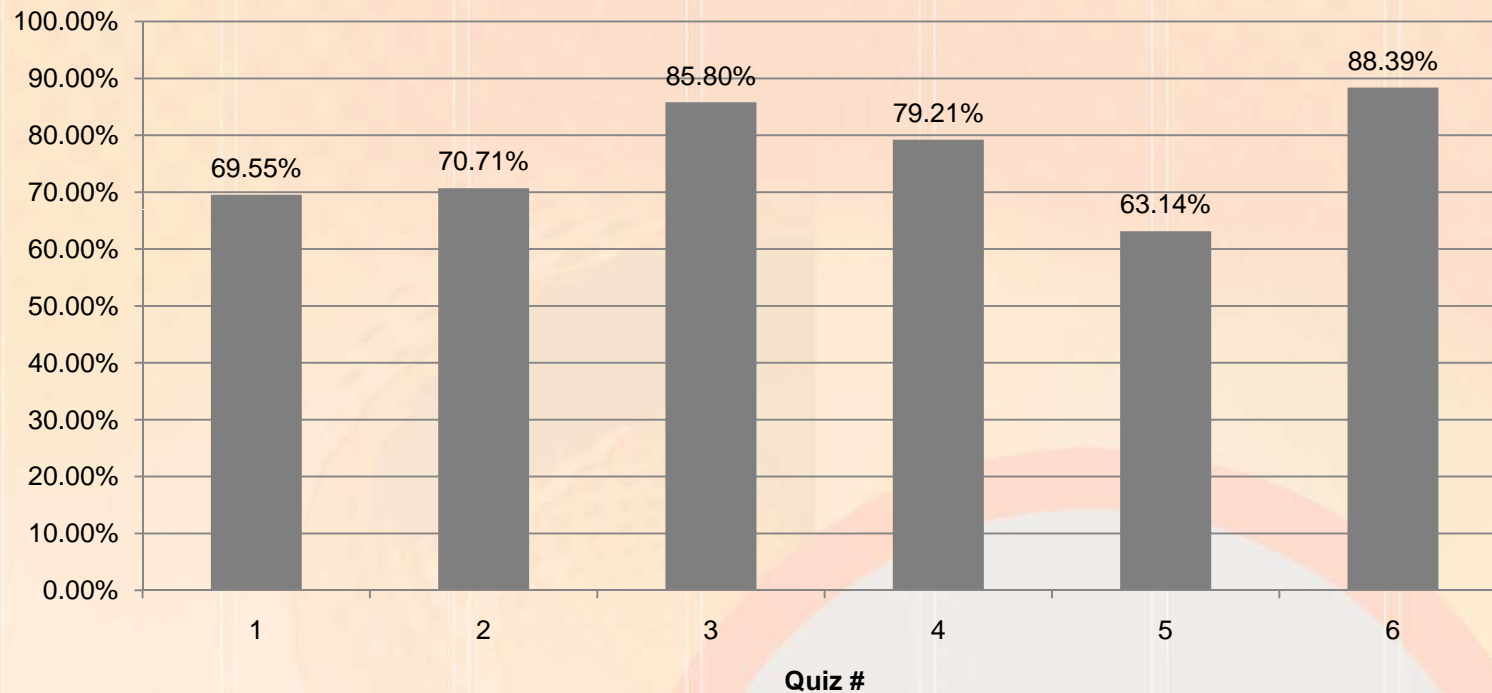
Since students are not completing the tutorials, the post-quizzes may not be a completely accurate measure of the tutorials' effectiveness.

It may also suggest changes for future tutorials: the most important information should be at the beginning of the tutorial, and tutorial 5 should be shorter so they do not skip as much.

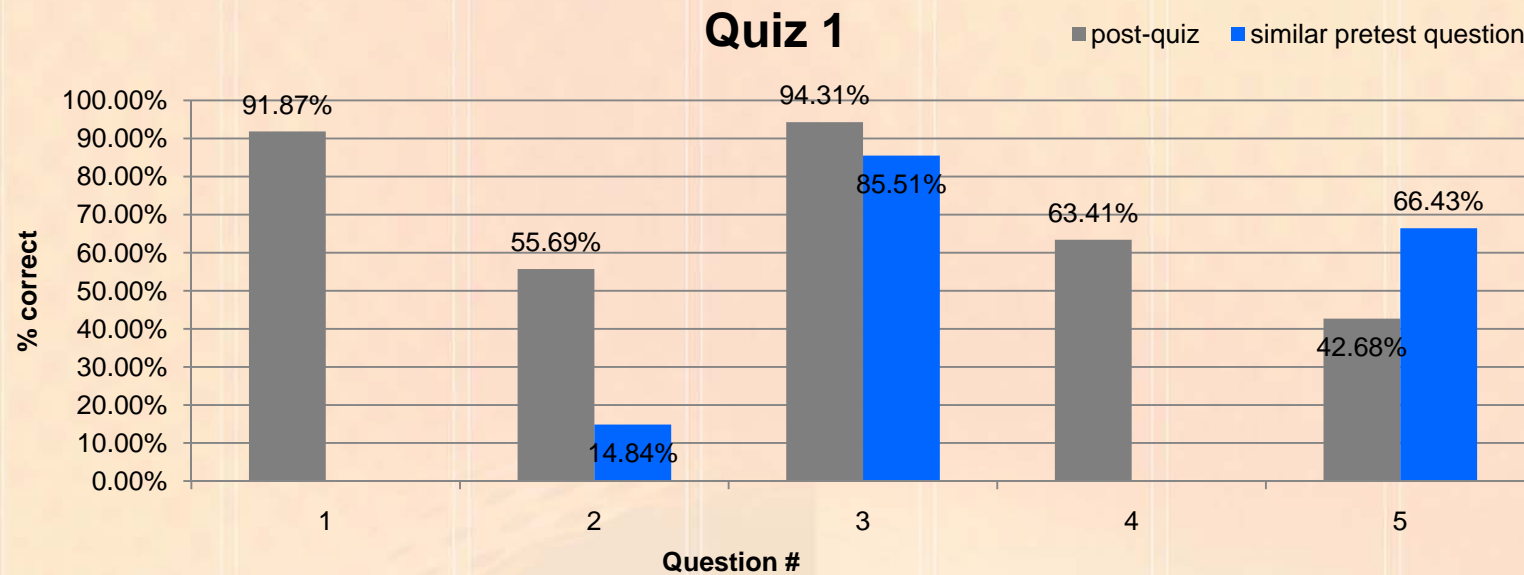
Post-Quiz Averages

The post-quizzes had two aims: first to determine if the students retained information from the tutorials; second to help reinforce information since they can see the quiz questions they missed with the correct answers.

Average Percentage per Quiz



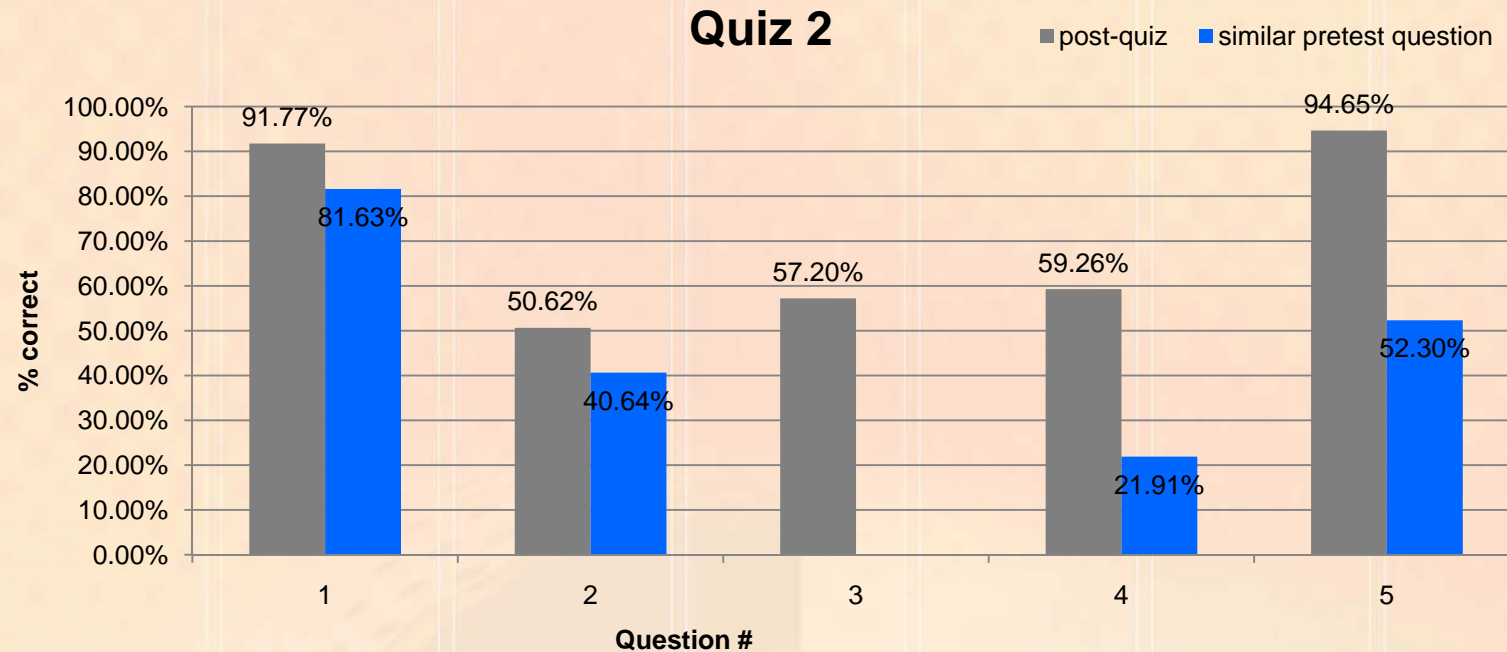
Tutorial 1 Post-Quiz Questions



Tutorial 1 was on sources and reliability, with a post-quiz average score of 69.55%.

- Question 1 addressing reliability averaged very high.
- Question 2 quizzed students on what made a source scholarly. This scored extremely low on the pretest so this is a marked improvement of over 40%.
- Question 3 about the recentness of information had the highest score.
- Question 4 addressed bias of information.
- Question 5 had the lowest score, indicating students do not know what is a good source for background information. This was the only question of all the quizzes with a decrease compared to the pretest, which was worded differently. The questions should be changed to be more similar to better test any increase of knowledge.

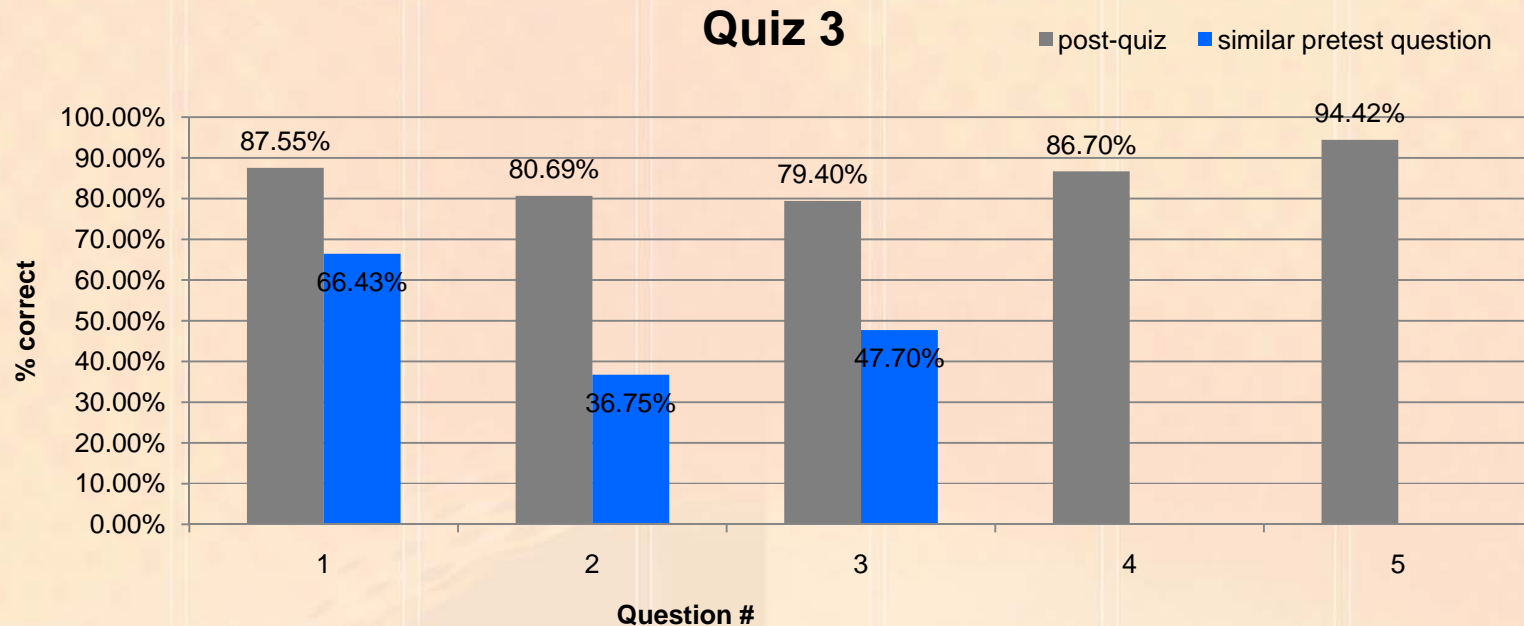
Tutorial 2 Post-Quiz Questions



Tutorial 2 was on general searching, with a post-quiz average score of 70.71%. The post-quiz shows improvement from pretest scores.

- Question 1 addressed phrase searching.
- Question 2 scored fairly low, quizzing students on keyword combinations and search strategies.
- Question 3 shows some students know that a keyword search is the broadest type.
- Question 4 asked about Boolean operators OR/AND and which one gives more results. Although the scoring is still somewhat low, this score is a large improvement over the pretest question.
- Question 5 is about narrowing search results, which shows over a 40% improvement.

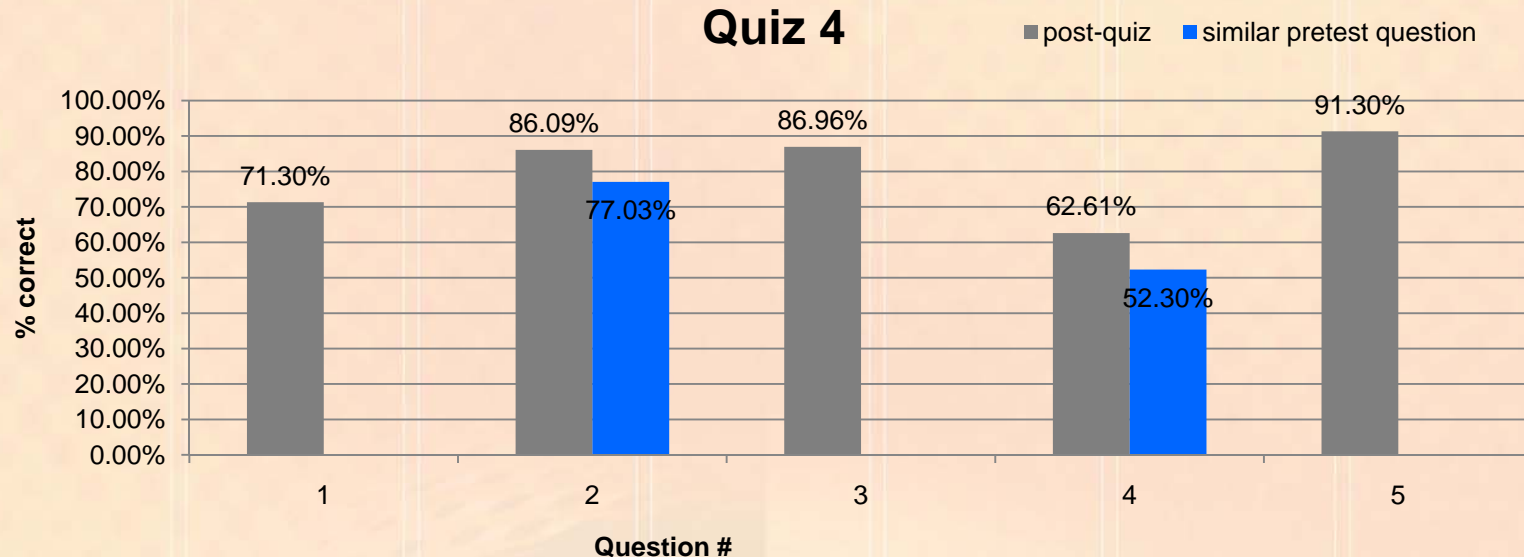
Tutorial 3 Post-Quiz Questions



Tutorial 3 was on books and the library catalog, with a post-quiz average score of 85.80%. The increases from the related pretest questions were significant.

- Question 1 asked what OhioLINK is.
- Question 2 asks students about the index of a book. The increase from the pretest question could be due to eliminating the “all of the above” answer option or to tutorial learning.
- Question 3 is about browsing call numbers for similar topics.
- Question 4 asked students to rank catalogs from smallest to largest: ATI, OSU, OhioLINK.
- Question 5 addressed picking up OhioLINK items students request.

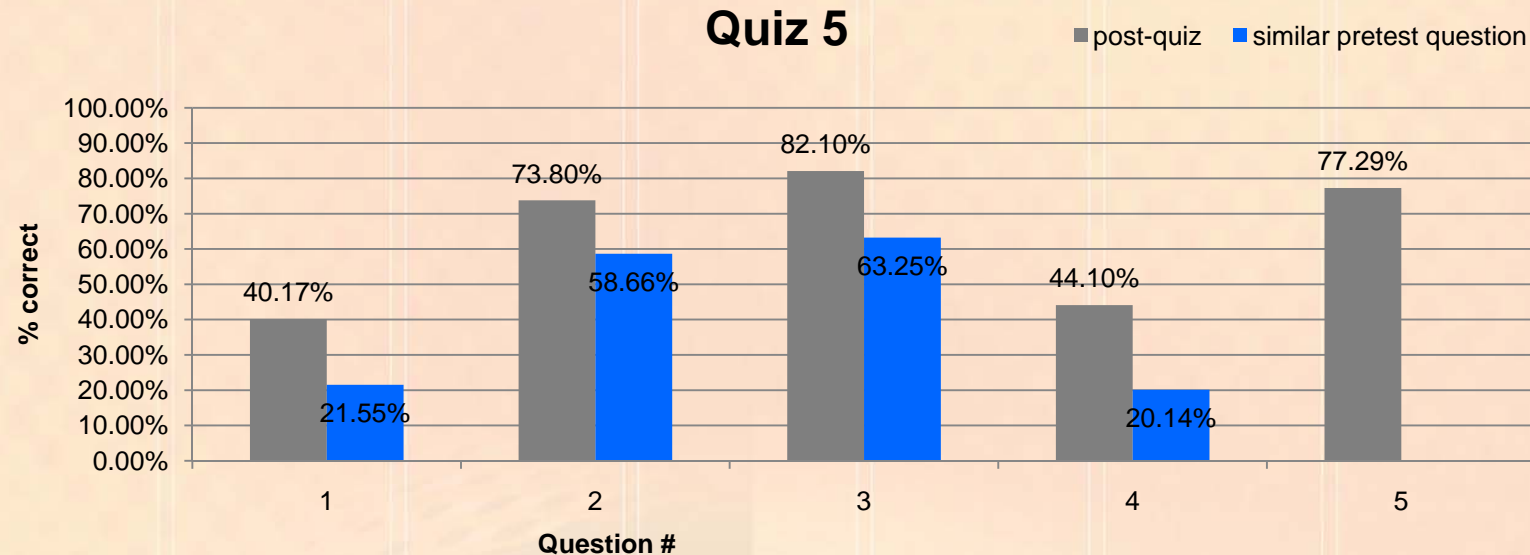
Tutorial 4 Post-Quiz Questions



Tutorial 4 was on periodicals and databases, with a post-quiz average score of 79.21%. The scores were increases compared to the corresponding pretest questions.

- Question 1 asked about the best format for full-text printing, a popular and desired aspect of searching for our students.
- Question 2 shows most students know what an abstract is.
- Question 3 asked students to pick the best database for a topic.
- Question 4 had the lowest score, asking students how to narrow results.
- Question 5 ensures that almost all students know to complete the off-campus sign in before searching OSU databases.

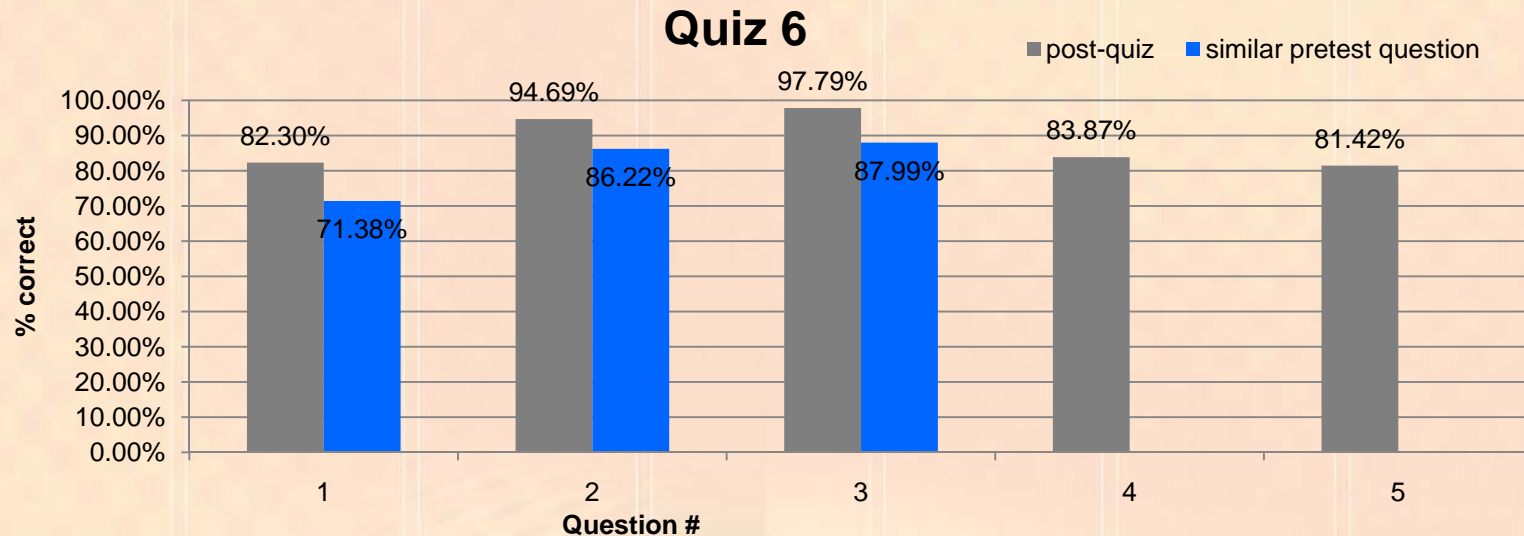
Tutorial 5 Post-Quiz Questions



Tutorial 5 was on the internet and had the lowest average of all the post-quizzes at 63.14%. It also had the lowest pretest scores. However, the students seemed to have increased their knowledge when compared to the corresponding pretest questions.

- Question 1 was the lowest scoring, addressing the use of blogs and wikis in research. However, this was almost doubled from the pretest question.
- Question 2 questioned truncation (without using the term).
- Question 3 scored the highest, about the definition of a wiki.
- Question 4 scored low regarding whether search engines search the entire internet.
- Question 5 asked about evaluating the validity of websites. The score indicates that most students know the criteria to use for evaluating online sources.

Tutorial 6 Post-Quiz Questions



Tutorial 6 was on copyright and plagiarism, with a post-quiz average score of 88.39%, the highest average score of all the post-quizzes. Students scored high on the three corresponding pretest questions as well, but the post-quiz still shows an increase.

- Question 1 addressed using online images for personal use.
- Question 2 indicates students know they can use others' work in a paper if they cite it.
- Question 3 scored the highest, asking students to identify plagiarism.
- Question 4 asked students to identify plagiarism as well with different wording/situations. Students also scored highly on this, suggesting they mostly know what plagiarism is.
- Question 5 asked about citing internet sources. Although this was the lowest scoring question in the post-quiz, it still indicates many students answered this correctly.

Post-Quiz Questions Summary

All answers to the post-quiz are found in the tutorial. The post-quizzes are normally taken immediately after students complete the tutorial, however it is not a requirement.

Therefore, the length of time they need to retain the information before they answer the question is usually very short. The statistics can suggest things about learning, but they cannot suggest anything about long-term retention or future application of information.

Only one post-quiz question (quiz 1, question 5) showed a decreased average when compared to the pretest, which can be attributed to either poor instruction in the tutorial or confusing wording on either/both of the pretest and post-quiz.

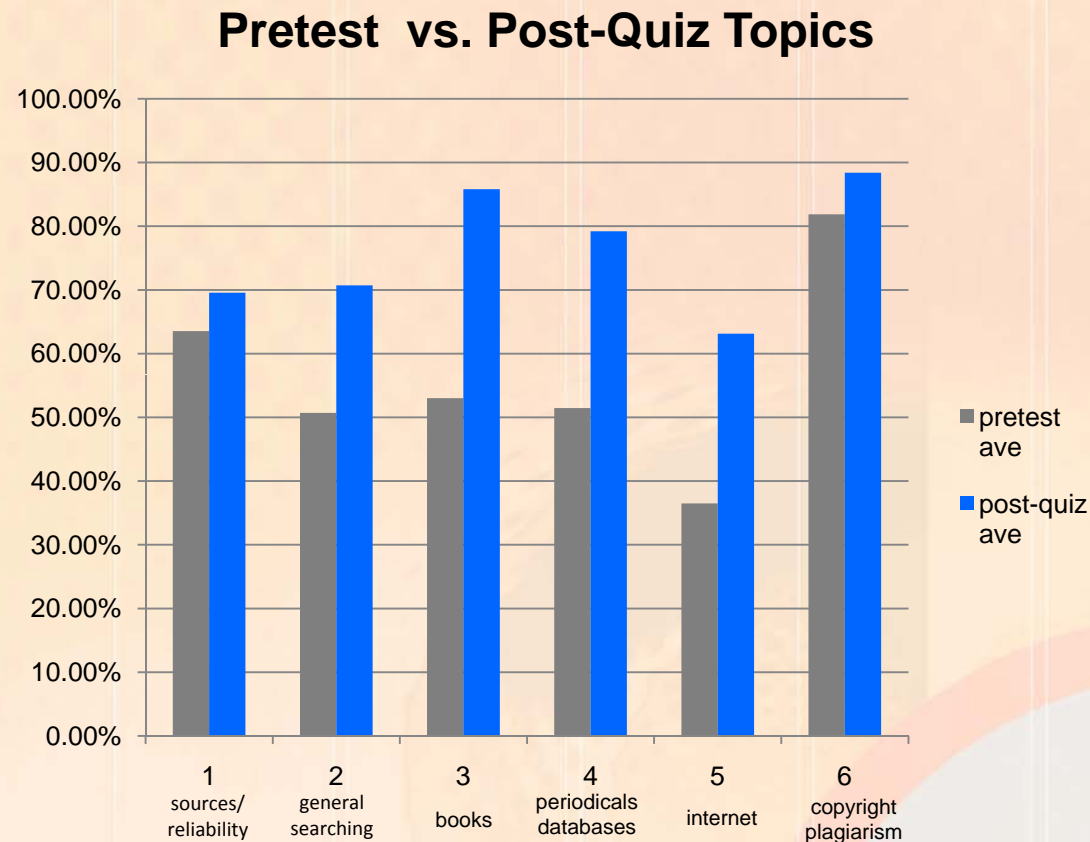
Not all questions on the post-quizzes were identical to the pretest questions on the same topic. This was originally done to prevent students from memorizing questions and force them to process the knowledge and apply it to different questions/situations.

There were also questions asked on the post-quizzes that were not covered at all on the pretest (about requesting a book through OhioLINK, printing full-text articles, etc).

Although this does not allow for comparisons between the pretest and post-quiz, it tests students on important, popular skills they will need as ATI students.



Pretest vs. Post-Quiz Topics



When comparing average percentages of the pretest topics to their corresponding tutorial post-quizzes, statistics show that students performed better on the post-quizzes on every topic.

- Topic 1 did not show a large increase from pre- to post- at 6%.
- Topic 2 increased 20%.
- Topic 3 increased over 32%, the highest increase of any topic.
- Topic 4 increased over 27%.
- Topic 5 increased over 26%.
- Topic 6 only increased 6%, but it is the highest scoring topic for the pretest and post-quiz topics.

Pretest vs. Post-Quiz Summary

Students scored higher on the post-quiz topics than the pretest for all six topics. This can be attributed to any of the following reasons:

- students learned the information from the pretest (missing them and seeing their mistakes and correct answers).
- students learned the information from the tutorials.
- students learned the information elsewhere (in class, doing research, individual library reference help, etc.) between the time they took the pretest and the tutorial post-quizzes.
- students looked up the answers while taking the post-quizzes because those scores were counted in their courses for a grade.

The average post-quiz score (for students completing all six post-quizzes) is 76.74%. This is an increase of over 15% when compared to the pretest score average 61.68%.

Although it is not possible to determine exactly how they learned this information, the important thing to note is that they do appear to be learning. This is positive because they are learning information literacy skills they will use in their coursework and beyond college.



Plans for Change

Fall 2009:

- write an orientation syllabi paragraph explaining how to access the tutorials.
- encourage faculty to put the assignment on the syllabus sooner than the last week so more students complete it near the beginning of their ATI career.
- adjust wording of questions that seem problematic.
- use low-scoring pretest questions to create same/similar questions on the post-quizzes to test increase in areas unfamiliar to incoming students.
- change some of the post-quiz questions to eliminate very high scoring questions and replace them with new questions to test other areas of knowledge.
- alter tutorials if it seems particular post-quiz questions with low scores cannot be contributed to poor wording.
- shorten tutorial 5 to be closer to 10 minutes so students only miss less of the information (based on average actual time spent) instead of over half the information.
- put important information toward beginning of tutorials to ensure students hear the most important information first.
- include feedback/rating options for students to offer opinions and suggestions about the tutorials and assessments.
- require a score of at least 4 points on the pretest to proceed to the tutorials to avoid early submission errors.

Overall Summary

Overall indications suggest the assessments were successful in measuring students' information literacy skills and the tutorials were successful in teaching information. The accuracy and extent of these indications will become clearer as corrections are made and statistics can be compared over years. Assessment results will always be used to improve the tutorials and pretest/post-quiz questions.

The concept of online tutorials was developed to devise a more time-efficient way to instruct incoming students. ATI Library has only one full-time librarian and one part-time librarian available for instruction. This makes it extremely difficult to coordinate a one-time visit to 12 orientation classes for only 45 minutes and make a dent in teaching information literacy.

The library is pleased with the increased post-quiz scores compared to the pretest scores, indicating an improvement in information literacy. This is a worthwhile endeavor of the ATI Library in both time and teaching and will continue into the 09-10 school year.

