Pre- and Post-Assessment

Three Possibilities for use at UW Tacoma for the “Doing Library Research” Class


This article reports on the experience gained by librarians at Texas Tech University Libraries while developing and implementing pre- and post-assessment surveys that were administered in eleven sections of a library research course taught in the fall of 2008.


This study investigates the impact that pre-tests have on the effectiveness of library instruction when students are given feedback on their pre-test performance. Librarians and academic faculty partnered to measure library instruction outcomes in two Master’s degree classes. The Research Readiness Self-Assessment (RRSA) was used as a pre-test (before instruction) and a post-test (after instruction) in Class 1 and as a post-test only in Class 2. Students who completed both tests performed significantly better on a post-test, earning higher scores on obtaining information and overall information literacy. They reported greater library/research experience and less reliance on browsing. Compared to students who did not take a pre-test, students who received pre-test-based feedback had higher scores on library/research experience and lower scores on reliance on browsing. To enhance the effectiveness of library instruction, students can be given pre-test-based feedback that compares their actual and perceived literacy and encourages the use of library databases.

Link to the Research Readiness Self-Assessment:

http://rrsa.cmich.edu/


The researchers examined the application and results of an assessment tool and its connectivity to instructional strategies for improving literacy outcomes. ACRL’s “Information literacy competency standards for higher education” provided the basis for the construction of the assessment tool. The instrument was given to chemistry graduate students enrolled in the course at the beginning and at the end of the semester. The assessment results from all three years indicated marked improvements in the average student score from the pre- to the post-test. The assessment provided evidence of skill development over the course of the semester for specified outcomes. The paper provides methods for approaching the assessment of information literacy skills by focusing on tool development based on desired learning outcomes.
APPENDIX A:
Texas Tech University Libraries Survey Questions and the Pre- and Post-Assessment Results

From:

PR = Pre-Assessment PO = Post-Assessment

**Question 1. What are the 3 Boolean operators?**
- a - Add
- b - If
- c - Not
- d - Then
- e - And
- f - Or
- g - Sum

Answer: c, e, f

PR-1
Correct 25%
Incorrect 75%
PO-1
Correct 76%
Incorrect 24%

**Question 2. What is the least likely resource to use to find citations to articles?**
- a - Library's online catalog
- b - Electronic databases
- c – Internet
- d - Search engines
- e - Periodical indexes

Answer: a

PR-2
Correct 6%
Incorrect 94%
PO-2
Correct 16%
Incorrect 84%
Question 3. In determining the authority of an Internet site, you should look for:
a - Author’s credentials
b - Preferred URL (like .edu .gov .org)
c - Sentence or paragraph stating that the information is authoritative
d - a & b

Answer: d

PR-3
Correct 84%
Incorrect 16%
PO-3
Correct 95%
Incorrect 5%

Question 4. Which of the following statements are correct?
a - 0-415-01987-7 is a call number.
b - C 100.834 1991 is a World Wide Web (URL) address.
c – Kerbel, Mathew, "Remote and Controlled Media Politics in a Cynical Age," Westview, 1995 is a citation to a book.
d - Kerbel, Mathew. "Remote and Controlled Media Politics in a Cynical Age," Westview, 1995 is a citation to a journal article.
e - http://www.bgsu.edu/colleges/library is a World Wide Web (URL) address.

Answer: c, e

PR-4
Correct 7%
Incorrect 93%
PO-4
Correct 12%
Incorrect 88%

Question 5. Which of the following word searches would give you books most directly related to gang violence?
a - Gangs AND violence
b - Gangs OR violence
c - Gangs AND NOT violence

Answer: a

PR-5
Correct 95%
Incorrect 5%
PO-5
Correct 97%
Incorrect 3%
Question 6. Which of the following are primary research sources?

a - Book on constitutional law
b - Copy of the United States Constitution
c - Book of Toni Morrison's poems
d - Book that interprets Toni Morrison's poems
e - Book of letters written by Abraham Lincoln
f - Biography of Abraham Lincoln

Answer: b, c, e

PR-6
Correct 23%
Incorrect 77%

PO-6
Correct 27%
Incorrect 73%

Question 7. Identify which of the following are typical of scholarly research sources.

a - Articles geared to a general audience
b - Articles with bibliographies and footnotes
c - Articles geared to researchers
d - Articles meant to inform and entertain
e - People Magazine
f - Educational Psychology Review

Answer: b, c, f

PR-7
Correct 24%
Incorrect 76%

PO-7
Correct 57%
Incorrect 43%
**Question 8.** Which of the following kinds of information can be found in the Library's online catalog?

- a - Journal articles on a certain topic
- c - Books on a certain topic
- e - Sound recordings the library owns
- b - Journals the library owns
- d - Book reviews

Answer: b, c, e

PR-8
Correct 4%
Incorrect 96%

PO-8
Correct 5%
Incorrect 95%

**Question 9.** It is possible to find full-text magazine articles in the library's online catalog:

- a - True
- b - False

Answer: b

PR-9
Correct 18%
Incorrect 82%

PO-9
Correct 13%
Incorrect 87%

**Question 10.** Which research database contains full-text newspaper articles?

- a – ABI/Inform
- b - Lexis-Nexis Academic Universe

Answer: b

PR-10
Correct 47%
Incorrect 53%

PO-10
Correct 93%
Incorrect 7%
Question 11. When you retrieve an article in Academic Search Complete, which format leads you to a display that looks like a photocopy?

a - PDF full-text  
b - HTML full-text

Answer: a  
PR-11  
Correct 74%  
Incorrect 26%  
PO-11  
Correct 82%  
Incorrect 18%


a - MLA  
b - APA  
c - Turabian  
d – Chicago

Answer: a  
PR-12  
Correct 78%  
Incorrect 22%  
PO-12  
Correct 74%  
Incorrect 26%

Question 13. What is an annotated bibliography?

a - List of reference sources on animation  
b - List of references with summaries of each  
c - Book with handwritten notes in the margins of pages  
d - List of citations to books with the author's signatures included in the citations

Answer: b  
PR-13  
Correct 52%  
Incorrect 48%  
PO-13  
Correct 79%  
Incorrect 21%
Question 14. What information is contained in a bibliographic citation?

a - Credentials, revisions, date of publication
b - Author, title, publication information
c - Revision, title, publisher

Answer: b

PR-14
Correct 90%
Incorrect 10%

PO-14
Correct 88%
Incorrect 12%

Question 15. Which of the following statements are correct?

c - 0-4 15-0 1987-7 is a call number.

Answer: a, e

PR-15
Correct 18%
Incorrect 82%

PO-15
Correct 23%
Incorrect 77%
APPENDIX B:
Research Readiness Self-Assessment Example Questions and Measurements

From:

Ability to obtain information:

Understanding of terminology (e.g., abstract and bibliography). Ability to conduct basic and advanced information searches. Application of Boolean operators [and, or, not] to limit searches. Ability to differentiate scholarly documents, authoritative sources, periodicals, and primary sources from other types of documents and sources.

What is the most authoritative source of current scholarly (analytical) information on a narrowly specialized topic?

- Web search engines, such as Google or Yahoo
- Textbook
- Newspaper
- Book
- Journal

Ability to evaluate information:

Ability to compare and evaluate the quality of different information resources, including journal articles and Internet Websites. Judgment of documents’ credibility and evidence based decision-making.

You found three articles on learning disabilities. Click on the links below to examine each article and evaluate its content. Which article is most likely to serve commercial purposes?

- <hyperlink>On the Lookout for Learning Disabilities</hyperlink>
- <hyperlink>Overcoming Learning Disorders</hyperlink>
- <hyperlink>Teaching Students with Learning Disabilities</hyperlink>

Understanding of plagiarism:

Ability to detect plagiarism and copyright violations. Which of the following can be reproduced without a proper reference? Check all that apply:

- Corporation board member’s point of view
- Spoken word
- Common knowledge, such as “the world is not flat”
- My classmate’s ideas
- Unpublished works
- Someone’s political opinions I read in a blog
APENDIX C:
Complete set of assessment questions, Bibliography of Chemistry, University of Kansas.

From:

<table>
<thead>
<tr>
<th></th>
<th>Multiple Answer</th>
<th>0 points</th>
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<tbody>
<tr>
<td>1</td>
<td>Years of graduate study in chemistry/ pharmacology &amp; toxicology, at the University of Kansas?</td>
<td>0-12 months (1st year)</td>
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<tr>
<th></th>
<th>Multiple Answer</th>
<th>0 points</th>
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<tbody>
<tr>
<td>2</td>
<td>Please select the area of chemistry that best describes your interest. Please choose only one.</td>
<td>organic</td>
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<tr>
<th></th>
<th>Either/Or</th>
<th>1 point</th>
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<tr>
<th></th>
<th>Either/Or</th>
<th>2 points</th>
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<tbody>
<tr>
<td>4</td>
<td>At the time of this assessment, is the book, <em>Biocatalysts in organic synthesis</em>, checked out of the Library?</td>
<td>Yes</td>
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<thead>
<tr>
<th></th>
<th>Short Answer</th>
<th>3 points</th>
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<tbody>
<tr>
<td>5</td>
<td>Please write out the steps taken to identify the call number of the book, <em>Biocatalysts in organic synthesis</em>. Tell us where you searched and how.</td>
<td>Answer</td>
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<th></th>
<th>Multiple Answer</th>
<th>3 points</th>
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<tbody>
<tr>
<td>6</td>
<td>One type of information retrieval system is the library online catalog. Please select from the list below types of information available from the library catalog. Please select all that apply.</td>
<td>Titles and locations of books held at KU</td>
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<th></th>
<th>Short Answer</th>
<th>4 points</th>
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<tr>
<td>7</td>
<td>List four information fields (or types of information) that the search engine of the Library Catalog provides as means to search the catalog.</td>
<td>1.</td>
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<th></th>
<th>Multiple Choice</th>
<th>2 points</th>
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<tbody>
<tr>
<td>8</td>
<td>If a book you need is not owned by KU Libraries and you desperately need it, what service would most efficiently obtain this book for you use?</td>
<td>Circulation</td>
</tr>
</tbody>
</table>

(continued)
9. Short Answer 3 points
Provide information about the service you chose above, as if you were giving directions to a friend who needed to use it for the first time. Please describe how you would submit a request, where the service is located, and how much it costs.

Answer:

10. Matching 3 points
The following is a journal citation in a bibliography:


Please match each component part of this citation with its correct name.

<table>
<thead>
<tr>
<th>Match Question Items</th>
<th>Answer Items</th>
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<tbody>
<tr>
<td>A. 198</td>
<td>A. Journal volume number.</td>
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<tr>
<td>B. Stereospecific angular alkylation</td>
<td>B. First page of article.</td>
</tr>
<tr>
<td>C. 1</td>
<td>C. Journal issue number.</td>
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<tr>
<td>D. 83</td>
<td>D. Article title.</td>
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</table>

11. Either/Or 3 points
You would like to locate the following article:


Does the Library have access to the article in print?

- Yes
- No

12. Either/Or 3 points
Does the Library have access to the article above electronically?

- Yes
- No

13. Short Answer 3 points
Please write out the steps taken to identify the availability of the article in print or electronically. Tell us where you searched and how.

Answer:

14. Multiple Choice 3 points
Below is a citation for a journal article. From the following list, select the citation formatted correctly in the ACS (American Chemical Society) style.


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<table>
<thead>
<tr>
<th>Question</th>
<th>Type</th>
<th>Points</th>
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<tbody>
<tr>
<td>15</td>
<td>Short Answer</td>
<td>3</td>
</tr>
<tr>
<td>Provide the specific names of 3 different information resources (indexing and abstracting tools) that help you to identify journal articles in your specialized subject area.</td>
<td></td>
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<td>16</td>
<td>Short Answer</td>
<td>4</td>
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<tr>
<td>Select one of the information resources you chose above and provide the following information: 1) What is one strength of the resource in providing scholarly information in your subject area? 2) What is one weakness of the resource in providing scholarly information in your subject area?</td>
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<tr>
<td>17</td>
<td>Short Answer</td>
<td>3</td>
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<td>Using one of the electronic resources you listed above, describe what techniques or features of the resource you can employ to narrow your topic to a manageable number of retrieved records.</td>
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<tr>
<td>18</td>
<td>Short Answer</td>
<td>3</td>
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<tr>
<td>Using one of the electronic resources you listed above, describe what techniques or features of the resource you can employ to broaden your topic to expand the number of retrieved records.</td>
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<td>19</td>
<td>Short Answer</td>
<td>4</td>
</tr>
<tr>
<td>Your need to find articles on the <em>epidemiology of lyme disease in the United States</em>. Please answer the following question in the space provided below. How would you construct a search statement that combines keywords using Boolean operators?</td>
<td></td>
<td></td>
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<tr>
<td>20</td>
<td>Multiple Answer</td>
<td>3</td>
</tr>
<tr>
<td>From the following list of sources, select the two that allow you to find all references in the literature that cite the following article: Burgstrahler, Albert W.; Nordin, Ivan C. Stereospecific angular alkylation. A new application of the Claisen rearrangement. <em>J. Am. Chem. Soc.</em>, 1961, 83(1): 198-206.</td>
<td></td>
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<tr>
<td>Google</td>
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<tr>
<td>ChemNetBase</td>
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<td>Web of Science</td>
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<td>PubMed</td>
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<tr>
<td>SciFinder</td>
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<tr>
<td>I don’t know</td>
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<th>21</th>
<th>Short Answer</th>
<th>4 points</th>
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<tr>
<td></td>
<td>Please use one of the sources mentioned above and answer the following two questions:</td>
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<td></td>
<td>What source did you use?</td>
<td></td>
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<td></td>
<td>How many times was the article cited?</td>
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<th>22</th>
<th>Short Answer</th>
<th>3 points</th>
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<tr>
<td></td>
<td>Provide the name of two sources (1 print and 1 electronic) that provide data information relevant to your subject area (e.g. property data; sequencing data)</td>
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<th>23</th>
<th>Short Answer</th>
<th>3 points</th>
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<tr>
<td></td>
<td>Choose one of the resources you named above and provide the following information:</td>
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<tr>
<td></td>
<td>1. Give an example of an “information-need” that you might have that this resource would answer. An example might be, you would choose the Oxford English Dictionary when you had an “information-need” to know the etymology of a certain English word.</td>
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<td></td>
<td>2. Provide the name of the resource you chose:</td>
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<th>24</th>
<th>Multiple Choice</th>
<th>2 points</th>
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<tr>
<td></td>
<td>Select from among the following the tool(s) that manage reference or citations and therefore assist in writing research papers.</td>
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<tr>
<td></td>
<td>□ SciFinder</td>
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<td></td>
<td>□ EndNote</td>
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<td></td>
<td>□ ChemOffice</td>
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<td></td>
<td>□ All of the above</td>
<td></td>
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<td></td>
<td>□ I don’t know.</td>
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<th>25</th>
<th>Short Answer</th>
<th>3 points</th>
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<td></td>
<td>Describe two features of a software program that assist in managing citations.</td>
<td></td>
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<th>26</th>
<th>Multiple Choice</th>
<th>2 points</th>
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<tr>
<td></td>
<td>In the U.S., written ideas have intellectual property rights associated with them. For a published journal article, who is more than likely to be the owner(s) of the intellectual property?</td>
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<tr>
<td></td>
<td>□ Author(s)</td>
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<tr>
<td></td>
<td>□ Publisher</td>
<td></td>
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<td></td>
<td>□ University</td>
<td></td>
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<td></td>
<td>□ Principal Investigator Only</td>
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<td></td>
<td>□ I don’t know.</td>
<td></td>
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<th>27</th>
<th>Short Answer</th>
<th>5 points</th>
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<tr>
<td></td>
<td>Pick 1 of the 3 websites listed below and answer each of the questions about that resource.</td>
<td></td>
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<tr>
<td></td>
<td>- ChemFinder: <a href="http://chemfinder.cambridgesoft.com">http://chemfinder.cambridgesoft.com</a></td>
<td></td>
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<td></td>
<td>- Sigma-Aldrich: <a href="http://www.sigmaaldrich.com/Local/SA_Splash.html">http://www.sigmaaldrich.com/Local/SA_Splash.html</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>What is the name of the site you chose?</td>
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<td></td>
<td>When was it last updated?</td>
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<tr>
<td></td>
<td>Who is the publisher or sponsor?</td>
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<tr>
<td></td>
<td>Can the information on this site be trusted, and why or why not?</td>
<td></td>
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<tr>
<td></td>
<td>What is the subject content of this site?</td>
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(continued)
Multiple Choice  5 points

Take a look at the paragraph below. Assuming that you needed to add this information into a paper that you were writing, please select from the following drafts the one that would NOT be plagiarizing the original passage.

Original passage (Jackson, 2006)³

William Shakespeare was born in Stratford-on-Avon in April (probably April 23), 1564. His father was a citizen of some prominence who became an alderman and bailiff, but who later suffered financial reverses. Shakespeare presumably attended the Stratford grammar school, where he could have acquired a respectable knowledge of Latin, but he did not proceed to Oxford or Cambridge. There are legends about Shakespeare’s youth but no documented facts.


☐ Draft 1. William Shakespeare was born in 1564 in Stratford-on-Avon. His father was a citizen of some importance who became a bailiff and later suffered financial problems. Shakespeare probably attended a grammar school in Stratford where he gained significant knowledge of Latin, but didn’t proceed to Oxford. Mainly legends exist about Shakespeare’s youth since there are no documented facts. (Abbrev. 1962)

☐ Draft 2. William Shakespeare was born in 1564 in Stratford-on-Avon. His father was an affluent member of the community. At one time a well-known and respected alderman and bailiff, he later lost his financial security. Experts suspect that Shakespeare went to the Stratford grammar school where he probably obtained a command of the Latin language, however, since there are no documented facts about his childhood, scholars rely on rumors and stories believed to be historically accurate. They do know that he did not continue his education at Oxford or Cambridge. (Abbrev. 1962)

☐ Draft 3. William Shakespeare was born in 1564 in Stratford-on-Avon. His father was a prominent citizen who suffered financial losses after becoming an alderman and bailiff. Shakespeare may have attended the Stratford grammar school and learned Latin, but he did not go on to Oxford or Cambridge. There are no documented facts about Shakespeare’s youth so scholars have to rely on legend. (Abbrev. 1962)

☐ None of the above.

☐ I don’t know.

Multiple Choice  0 points

Finally, please reflect on how you think you did on this assessment of your chemistry information fluency skills and select the number that best represents your score, 1 being the lowest and 5 being the highest.

☐ I didn’t know anything.
☐ I knew a bit.
☐ I knew about half.
☐ I knew quite a lot.
☐ I understood everything.

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