

# **CALI Usability Study**

## **Final Report**

*www.cali.org*

**COM 525 – Spring 2009**  
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# 1. Introduction

This report summarizes the usability study of the Computer-Assisted Legal Instruction (CALI) website ([www.cali.org](http://www.cali.org)). The study was conducted in the spring semester of 2009 for COM 525:Usability Testing and Research course taught by Dr. Susan Feinberg at the Illinois Institute of Technology (IIT). Team CALI consisted of four student members: Ann Goliak, Bridie Sullivan, John Pakan, and Kelly Schaefer.

The goal for the team's project was to work with a volunteer client, in this case CALI, to provide testing on a website and to provide user-generated feedback on this website.

This report contains the following sections:

- Introduction- Provides information on the CALI team, the mission of the CALI project, and the goals and scope of the project.
- Methodology- Describes the overview of the methodology shows the test schedule, test artifacts, and user profiles.
- Tasks – Describes the task selection process.
- Results – Provides quantitative and qualitative results of the usability study.
- Findings and Recommendations – Provides the top findings, as well as the recommendations of the CALI team.

## 1.1 CALI Overview

The mission of CALI is as follows from the website: "CALI is a U.S. 501(c)(3) non-profit consortium of law schools that researches and develops computer-mediated legal instruction and supports institutions and individuals using technology and distance learning in legal education. CALI was incorporated in 1982 and welcomes membership from law schools, paralegal programs, law firms and individuals wishing to learn more about the law."

CALI is comprised of over 800 case lessons that cover a wide range of legal topics that are organized on the website in several ways. There are three distinct user groups for the CALI site: law instructors, law instructors as authors for the site, and law students in their first, second, and third years (also known as 1L, 2L, and 3L students).

The screenshot shows the CALI homepage with the following elements:

- Navigation Menu:** Lessons, Podcasts/Blogs, Awards, Law Faculty Interest, Conferences, Surveys/Articles, Support, About.
- Mission Statement:** CALI is a U.S. 501(c)(3) non-profit consortium of law schools that researches and develops computer-mediated legal instruction and supports institutions and individuals using technology and distance learning in legal education.
- Image Links:** LEGAL EDUCATION COMMONS, TOOLS FOR CHANGE 2009 CONFERENCE FOR LAW SCHOOL COMPUTING, MediaNotes.
- My CALI:** A login section with fields for Email Address and Password, and a login button. It also includes links for "Not a registered user yet?" and "Forgot your password?".
- Quick Links:**
  - CALI Home
  - Lessons
  - CODEC: Distance Learning
  - CALI Radio: Podcasts
  - Classcaster: Podcasting
  - New CALI Services
  - Teknoids website
- Top 10 1L Lessons Yesterday:**

Rank	Lesson Title	Count	Change
1.	The Parol Evidence Rule (Contracts)	1	—
2.	Woburn: A Game of Discovery (Civil Procedure)	35	▲
3.	Joinder of Claims and Parties (Civil Procedure)	4	▲
4.	Bilateral and Unilateral Contracts (Contracts)	115	▲
5.	Conditions (Contracts)	6	▲
6.	Jurisdiction Over the Person (Civil Procedure)	2	▼
7.	Accomplice Liability - Definitional Issues (Criminal Law)	10	▲
8.	Rule Against Perpetuities 1: Common Law Rule Against Perpetuities (Property Law)	5	▼
- CALI Spotlight:**
  - Webinar: Medianotes\* 29 Mar 2009
  - Don't Forget Tomorrow's Webinar: Online Tools for Engaging Students\* 26 Mar 2009
  - Law Librarian Blog links to last week's webinar video\* 23 Mar 2009
  - CALI DVD Recycling Program\* 19 Mar 2009
  - Welcome American Association of Law

Figure 1 CALI homepage (www.cali.org)

## ***1.2 Client's Goals and Objective: Defining Usability Testing***

John Mayer, Executive Director for CALI, laid the foundation for our user testing and research goals by presenting the mission and goals of the site to the CALI team. Mayer outlined the purpose of the site and its contents, along with Mayer's presentation focusing on the ways in which lessons are presented on the site and how they can be accessed, the CALI team agreed with Mayer that tasks would be developed for law students that focused specifically on lessons. The testing would not test other users or other areas of the website.

Once Mayer's presentation was over, the team was able to ask him specific questions to further understand what the issues with the website were as he saw them and why he was seeking a usability test for the site. Mayer explained that he thought he may have a usability problem because he was trying to be all things to all people and that with five ways of getting to lessons, it might be too confusing for the user. He says he "is trying to serve all masters" with the website. Mayer gave us several elements of the website to explore by saying that he wanted to know what people thought the lessons looked like, how people found lessons, and what differences users at various schools used the lessons. More generally, Mayer is interested in constant improvement of the CALI website and is interested in any findings and recommendations the team could make.

Because Mayer is interested in a wide range of feedback for the website, the usability testing and research team elected to conduct a usability test on the website. Usability testing is "the process of learning from users about a product's usability by observing them using the product..." (Barnum, p. 9). The team chose typical, representative users to perform tasks on the website and observed the users performing these tasks. While attitudinal information was also collected, the primary purpose for usability testing is to gather empirical data by observing participants actually using the website.

## ***1.3 Scope of the Project***

The CALI team focused narrowly on how users would find and take a legal lesson, because of the compressed time line allowed for the usability study. With a pilot tester and four additional users, the participants were asked to find the CALI website, find lessons on the site, and take a lesson. With the task of taking the lesson, the users were also asked to save the score from their lesson. Though the scope of tasks was limited, the focused tasks allowed our research team to exhaust the issues and get nuanced feedback from the participants. This feedback is tallied and described for Mayer in this report for use in his next update of the website.

# **2. Methodology**

The CALI website testing team tested five users, one pilot and four testers, on the same version of the CALI website over the course of a one-week period.

The users were asked to complete a screening questionnaire, a consent form, the usability test, and a debriefing survey. During the testing, participants were reminded often to think out loud during their testing while they completed six tasks related to the website. Once the testing was over and the debriefing survey was completed, the CALI team followed up with the participant to ask additional questions and ask for clarification of comments or actions.

Results for the tests can be found in [section 4.0](#) of this report. The remainder of this section describes the test schedule, the testing documentation, the user demographics, and the test goals.

## 2.1 User Profiles

Generally, the users for the CALI website are three-fold, according to Mayer:

- Law professors who author cases for the website.
- Law professors who do not author cases but may use the website as supplemental instructional material, at times required.
- Law students in their first, second, and third years of law school who use CALI to reinforce and clarify lessons from their lectures.

More specifically for the purposes of this usability study, the CALI team, in conjunction with Mayer, chose to test students. These students:

- Are law students in their first, second, and third years of law school. These students are known by the abbreviations 1L for first year, 2L for a second year, and 3L for a third year law student.
- Study a broad range of topics of the law and do not need to specialize in any certain legal discipline, though students with a particular interest in Constitutional Law and Environmental law were excluded due to the lack cases in the CALI data base.
- Attend law school in the City of Chicago at any one of the law schools in the Chicagoland area, such as University of Chicago, IIT's Kent School of Law, Northwestern, John Marshall, and DePaul to name a few.
- Use the CALI site currently and are familiar with the site's basic premise and have visited the site on at least on one occasion. The users are skilled with a computer and internet technology and have at least six months of computing experience which includes knowledge of how to operate computer hardware and how to navigate the internet by finding and using a website to obtain information by moving backward and forward, clicking on links, and entering search terms.
- Represent a sample population that balances demographics by taking into account gender, age, and year in law school, whether it be first, second, or third.

Of our five testers, four were men. Four were in the 21-30 age group, and two were in the 31-40 age group. One was a 1L, two were 2Ls, and one was a 3L; our pilot test was not a law student. They all had over one year's experience using a computer and they all felt could perform the internet functions asked of them. They all had limited experience with the CALI website. See Table 1 for more information.

User Profiles	User 1 Pilot John	User 2 Lisa	User 3 Jordan	User 4 Seth	User 5 Matt
Year in Law School	Not in law school	1L	3L	2L	2L
Legal Specialty	N/A	Health Law	Real Estate Law	Bank Law/Trade Law	Real Estate Law
Law School	N/A	IIT Kent	IIT Kent	IIT Kent	DePaul
Gender	M	F	M	M	M
Age	21-30	21-30	21-30	21-30	21-30
Visited the CALI website	Never	Never	Never	Never	A few times
Greater than 6 mo. computer experience	Yes	Yes	Yes	Yes	Yes
Click backward and forward	Yes	Yes	Yes	Yes	Yes
Click on links	Yes	Yes	Yes	Yes	Yes
Enter search terms	Yes	Yes	Yes	Yes	Yes

Table 1 User profiles

## 2.2 Test Schedule

We asked users to allot 90 minutes to testing. We planned 30 minutes for pretest screening, signing the consent form, and post-test debriefing. Sixty minutes were allotted to the actual testing. This schedule was based on our discussions of task and scenario creation. In reality, most tasks took significantly less time than we allotted.

<b>Tester</b>	User 1 Pilot John	User 2 Lisa	User 3 Jordan	User 4 Seth	User 5 Matt
<b>Date</b>	March 20, 2009	March 21, 2009	March 21, 2009	March 21, 2009	March 26, 2009
<b>Scheduled Time</b>	5:30p-9p	Noon - 1:30p	1:30p - 3:00p	3:00p - 4:30p	6:00p-7:30p
<b>Facilitator</b>	John	Kelly	Ann	Bridie	Kelly
<b>Timer/Observer</b>	Ann	Bridie	Kelly	Ann	Bridie
<b>Note taker/Observer</b>	Kelly & Bridie	John & Ann	John & Bridie	Kelly & John	John & Ann

**Table 2** Test schedule

## 2.3 Test Environment

All sessions for the usability testing were completed in the Usability Testing and Research Center (UTEC) at IIT.

The lab is comprised of two rooms, an observation room and a testing room. The testing team did not use the observation room and used the testing room solely. The testing room has a conference table and chairs, a computer and chair for the participant, and a white board.

## 2.4 Test Equipment

Though the lab has equipment such as a camcorder, a monitoring station, and a VCR, to test CALI we used only the computer, which is a PC running Microsoft Windows XP Professional, and a microphone in the lab. This computer is equipped with Camtasia, which recorded the user's actions such as mouse clicks and page navigation. It also recorded users as they thought out loud during the assigned tasks.

Testers were provided with the following documents:

- Consent form
- Scenarios
- Login and password
- Pre-test questionnaire
- Debriefing survey

The CALI team had copies of the facilitator's script, data collection form, and checklists for the note taker and facilitator.

The documents mentioned above can be found in the appendices.

## **2.5 Test goals**

With several ways to get to a lesson, as Mayer described, the test scenarios were presented to the participants by asking the users to perform tasks. Stripped of the scenarios, the tasks in simple form look like this:

- Find the CALI website
- Find a lesson by topic
- Find a lesson by title
- Find a lesson by popularity
- Find completed, scored, lessons
- Find, complete, and save a score for a lesson

These tasks and their scenarios are explored in more depth in the following section and listed in the appendix.

## **2.6 Scenario and Questionnaire Design**

One the tasks were decided upon with input from Dr. Feinberg, we created scenarios surrounding the tasks so that the tasks would be situated in a more realistic context. The scenarios asked the participant to put themselves in a realistic situation as a first, second, or third year law student and execute the task or tasks in each of the scenarios.

Once the six scenarios were all completed and behavioral data were collected as quantitative data, the users were asked to submit their answers to a debriefing survey to assess attitudinal results for the qualitative portion of the data.

# **3. Tasks**

## **3.1 Task Selection**

The tasks that made up the usability test were selected after meeting with the client, Dr. Feinberg, and reviewing the CALI site.

### **3.1.1 Initial interview with the client**

The client was open to many possibilities and had no specific goals in mind for the testing. He said in our meeting that the site "Serves many masters and that he would like to improve the overall quality of the site." He said he would be happy with whatever we could tell him about the usability of his site. He was concerned that we use law students as our testing group. This left it up to us to decide on tasks and scenarios.

### **3.1.2 Review with Dr. Feinberg**

Our review of the CALI site with Dr. Feinberg helped us solidify our user scenarios. Because she had not seen the site as in depth as the team members had, she was able to point out site details that we had become accustomed to. She could look at it with the perspective of a new user. Based on this review, we narrowed our eight tasks down to six.

### 3.1.3 Review of the CALI site

We performed a brief heuristic evaluation of the site, and found many areas of concern. We decided to focus on the way students find and use lessons, as that seemed to be the driving force of the site.

## 3.2 Usability Study Goals

As mentioned in section 3.1.1 feedback about the testing goals was very general so we spent our time brainstorming with Mayer about many possible testing scenarios. The testing goals were narrowed down and the testing of law students was chosen along with testing how law students find and complete a lesson. Though these were the final goals settled upon, there is room for more usability testing given Mayer's feedback of what could be tested.

Future users for testing include:

- Law students use the site similarly or differently from oppositely ranked law schools, such as a top-20 ranked school's students versus a school rated lower in the rankings.
- Non-author faculty could serve as the testing group for the site. These faculty members could be tested as it relates to using CALI in a classroom setting.
- Graduating law students and how they use the site as they approach studying for the bar exam.

## 4. Results

### 4.1 Quantitative Results

The following are time, task success rates for each tester. In addition, there's data on the methods used to find lessons and the quantitative feedback from the debriefing survey.

#### 4.1.1 Time to completion

Minutes and Seconds to Complete the Scenarios	User 1/Pilot John	User 2 Lisa	User 3 Jordan	User 4 Seth	User 5 Matt	Average
Scenario 1: Find CALI	0:56	0:39	3:45 <sup>1</sup>	1:00	0:31	1:22
Scenario 2: Find a lesson by topic	0:50	0:38	0:37	1:11	0:36	0:46
Scenario 3: Find a lesson by title	0:49	0:55	2:14	0:53	0:40	1:06
Scenario 4: Find a lesson	0:35	0:14	0:37	0:27	2:58 <sup>2</sup>	0:58
Scenario 5: Find completed scores	1:21	1:17	1:28	2:09	1:10	1:29
Scenario 6: Complete a lesson and upload the score	8:05 <sup>3</sup>	6:15 <sup>3</sup>	5:27 <sup>3</sup>	5:40	5:34	6:12
<b>Total Time</b>	<b>12:36</b>	<b>9:58</b>	<b>13:08</b>	<b>11:20</b>	<b>11:29</b>	<b>11:42</b>

**Table 3** Timing Results

<sup>1</sup>Longer search time due to user looking for site on school website. <sup>2</sup>Longer than average time due to user looking for 3L-only lessons. <sup>3</sup>All tasks for scenario was not successfully completed.

#### 4.1.2 Methods used to complete the tasks

Method used to find the lesson	Scenario 1: Find CALI	Scenario 2: Find a lesson by topic	Scenario 3: Find a lesson by title	Scenario 4: Find a lesson	Scenario 5: Find completed scores	Scenario 6: Complete a lesson and upload the score
User 1/Pilot (John)	Used Google	Scrolled for a search function; Used top menu bar for "lessons"	Used top menu bar for "lesson"	Found the lessons in the top 10 list	Used "my lessons" in the quick links	Used top menu bar for "lesson"
User 2 (Lisa)	Used Google	Found the lesson in a top 10 list	Looked in top 10 lessons; Found it in quick links lessons	Found the lesson in the top 10 list	Scrolled homepage looking; found "my lessons" quick link	Used "lessons" in quick links
User 3 (Jordan)	Looked on school site; used Google	Used "lessons" in quick links	Used "lessons" in quick links	Found the lessons in the top 10 list	Used "my lessons" in the quick links	Used "lessons" in quick links
User 4 (Seth)	Used Yahoo!	Scrolled for a search function; found "lessons" on quick links	Used "lessons" in quick links	Found the lessons in the top 10 list	Used "my lessons" in the quick links	Used "lessons" in quick links
User 5 (Matt)	Used Google	Used "lessons" in quick links	Used "lessons" in quick links	Looked specifically for a 3L section; found the lessons in the top 10 list	Used "my lessons" in the quick links	Used "lessons" in quick links
<b>Summary</b>	<b>4/5 used a search engine</b> <b>1/5 went to their institutional website</b>	<b>3/5 used the "lessons" link in the quick links section</b> <b>1/5 used the top menu bar</b> <b>1/5 used the top 10 list on the homepage</b>	<b>4/5 used the "lessons" link in quick links</b> <b>1/5 used the top menu bar</b>	<b>5/5 found the lesson in the top 10 area on the homepage</b>	<b>5/5 found the "my lessons" link in the quick links</b>	<b>4/5 used the "lessons" link in quick links</b> <b>1/5 used the top menu bar</b>

**Table 4** Methods used to find lessons

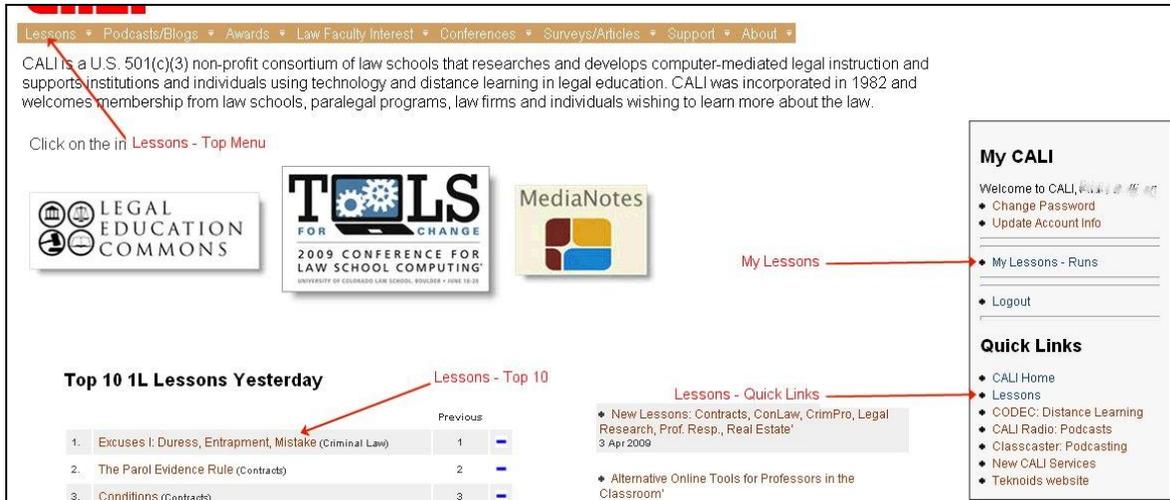


Figure 2 Different ways to find lessons

### 4.1.3 Success rates by task

	Task	User 1/Pilot John	User 2 Lisa	User 3 Jordan	User 4 Seth	User 5 Matt	Average
Scenario 1	Found site	1	1	1	1	1	1
	Found lesson	1	1	1	1	1	1
	Returned to home page	1	1	1	1	1	1
Scenario 2	Found Lesson by Topic (hearsay)	1	1	1	1	1	1
	Returned to home page	1	1	1	1	1	1
Scenario 3	Found Lesson by Title ("How to Brief a Case")	1	1	1	1	1	1
	Returned to home page	1	1	1	1	1	1
Scenario 4	Located lessons from previous week	1	1	1	1	1	1
	Identified which lessons were 2L/3L	1	1	1	1	1	1
	Returned to home page	1	1	1	1	1	1
Scenario 5	Successful login to CALI	1	1	1	1	1	1
	Found My Lessons – Run section	1	1	1	1	1	1
	Returned to home page	1	1	1	1	1	1
Scenario 6	Found lesson	1	1 <sup>1</sup>	1 <sup>1</sup>	1 <sup>1</sup>	1	1
	Navigate from page to page	1	1	1	1	1	1
	Submitted answer to Q1	0	0 <sup>2</sup>	0 <sup>2</sup>	1	1	0.4
	Submitted answer to Q2	1	1	1	1	1	1
	Saved score	1	0 <sup>3</sup>	0 <sup>3</sup>	1 <sup>4</sup>	1 <sup>4</sup>	0.6
	Returned to home page	1	1	1	1	1	1

Table 5 Success rates. 1=Success, 0=Fail

<sup>1</sup>Selects Web/HTML version first time. User 3 never realizes that Flash is the correct version to use. <sup>2</sup>Takes lesson multiple times and is unsuccessful in submitting answer to Question 1 each time. <sup>3</sup>User attempts to save score, but is unsuccessful. Task is ends after 1-2 attempts. <sup>4</sup>User saves score because exit the lesson and are prompted to save the score.

#### 4.1.4 Ratings from debriefing survey

Debriefing Survey Questions	User 1/Pilot John	User 2 Lisa	User 3 Jordan	User 4 Seth	User 5 Matt	Average
1. How easy or difficult was it to learn the CALI website?	3	3	2	1	2	2.2
2. How do you rate the efficiency of the CALI website?	2	3	3	1	2	2.2
3. How easy or difficult was it to recover from an error on the CALI website?	3	2	4	1	1	2.2
4. How do you rate the overall ease of use of the CALI website?	2	2	3	1	2	2
5. How do you rate the overall navigation of the CALI website?	3	2	3	1	2	2.2
6. How easy or difficult was it for you to find the information on the CALI website?	2	2	2	1	3	2

**Table 5** Debriefing results. 1=Very Easy; 2=Easy; 3=Neither Easy nor Difficult; 4=Difficult; 5=Very Difficult

## 4.2 Qualitative Results

The following are written results from the debriefing survey given to the users after the tasks portion of the usability study.

### 4.2.1 Easiest to use features

- In the debriefing survey, users singled out the Quick Links as being easy to use. Our observations backed this up. We repeatedly saw testers using the Quick Links to navigate the CALI site.
- Once testers were able to find the search box, they found this to be an easy way to explore the site.
- They liked that the lessons were divided by year. They felt this would make browsing for lessons easy. The Top 10 lessons were also easy to navigate.
- All in all, they felt that the site was easy to learn.

### 4.2.2 Hardest to use features

- The testers had trouble finding the search box.
- It was hard to choose which lesson format to use.
- Answering questions on the quiz was difficult.
- It was hard to save your lesson score.
- The Help screen was not helpful

### 4.2.3 Interesting comments

- One tester commented that the look of the CALI site needs updating.
- Another felt that the mission statement takes up too much space at the top. Additionally, the image links for the Legal Commons, TOOLS, and MediaNotes take up valuable space as well. One user thought they were ads on the website.
- Because the Top 10 lists are long, they require a lot of scrolling. One tester suggested using lists that could expand and collapse.

### **4.3 Review of Individual Tests**

#### **User 2 – Lisa**

Lisa first selected the web/HTML version and went through the lesson. After re-reading the scenario and remembering she needed to save, Lisa re-selected the web version, but this time sees the warning to use Flash.

When Lisa is ready to save the score (in the Flash version), she is unable to. The first attempt she thought it would be automatic since she was in the Flash version. The second time she see the Score button and reads the tooltip. After clicking the button and receiving the certificate, she closes it, assuming that now it's saved, which it is not.

Despite going through the lesson three times (once in html, twice in Flash), Lisa was never able to submit the answer to Question 1. She didn't realize that she didn't submit the answer. In the Flash version, she did notice the "yellow flash", but on the second attempt clicking Next, she moved onto the next page of the lesson.

Would like to see lessons based on classes - at start of academic term, enter in classes and CALI would customize based on these inputs.

#### **User 3 – Jordan**

Selected web/html version and completes the lesson twice.

- The first time, he clicked "Exit" at the end of the lesson, assuming that it would prompt him to save like most other applications (e.g., Office products). Since this version did not allow for score saving, he is not prompted to save.
- The second time he looks for a Save button, clicks on the Score button (receives certificate), and uses the Help to figure out how to save score. He ends up never being able to save.

Jordan does not successfully submit the answer for Question 1 either time, and seems unaware that he hasn't.

#### **CALI Recognition**

- Jordan first checked the Kent website looking for a link to CALI. When he didn't find it, he assumed Kent and CALI had no connection to each other.
- Said CALI could have been of use past three years. CALI needs to get the word out before school starts and would tell his friends to try CALI.
- Had heard of CALI and walked by the office, assumed it was just about the award.

#### **User 4 – Seth**

Selected web/html version and completed lesson. Eventually (after trying Help and exiting lesson) he finds the disclaimer about Flash on the first page of the web version.

Had to click back several pages to get the information needed to answer Question 2.

Saves score by exiting the lesson and being prompted.

## User 5 – Matt

Did not see "My Lessons - Runs" immediately. Since it was important, expected it under Quick Links.

Had to click back several pages to get the information needed to answer Question 2. Matt had to click back several times to get all the information needed to answer the question.

Saves score by exiting the lesson and being prompted.

- "I assume upload is the same as save"

Expected subtopics when he clicked on the "By Subject" links.

Too much text/reading

- He tends to skip the intro stuff and would go straight to the questions.
- Fact patterns need to be shorter and/or all one page.
- Description on Search button was not helpful.

Felt most of the home page was wasted real estate, e.g., thought images were ads.

## 4.3 Comments Overheard

The following comments were overheard during the usability study.

- "It highlights every letter when I enter a search term. Every letter!" (user laughs at the screen) .
- "I'll have to search by the dude's last name...I can't find "Defenses." Later, the facilitator to the user: "You could not find 'Defenses' because you spelled it 'Defences.' User: "Ohhhh..."
- "Which one should I use?" Here the user is faced with four choices on running a lesson, only one of which saves a score. Good luck!
- "It doesn't tell me to go to 'next.' I'll just assume..." User exits and loses all data.
- "This site looks like something out of the 1990s..."
- "I guess it's [CALI] not connected to my school."

# 5. Findings and Recommendations

## 5.1 Top Five Positive Findings

### 1. Search engine optimization

This is excellent for CALI. In all cases, we observed that when a participant typed "CALI" into the search bar, every time CALI came up as the number one listing. This high ranking in the listings makes it easy for the user to find the site.

### 2. Login feature

It is easily found and executed each time. It is conventional looking so it is very recognizable. Participants went to it immediately when they realized that a username and password were needed to complete the task.

### 3. Name recognition

The law students had heard of CALI as an office and award.

### 4. Users completed tasks

We were pleased to find that our testers navigated the site quickly, and developed strategies for overcoming what the testing team felt would be roadblocks. For example, once they were able to find the search box, they returned to it for each task.

5. **Valuable content**

Users felt the content of the lessons was very valuable. Once the search was found, search results were as expected (exception – spelling errors as there is no error recovery for these).

## 5.2 Five Difficulties Encountered

1. **Search box**

Each participant wanted a search box on the first page; users had to find it on the second page. Even after getting to the second page, users did not see the Search immediately. One user scrolled up and down the page for 20 seconds before seeing it, others took just as long.

2. **Yellow flash/error notification**

The yellow flash was not enough to cue our users in that they needed to click the "Grade" button to grade their answers. Most simply hit the "Next" arrow, moving on to the next question. Only one user was persistent enough to figure out how to have his answer graded. It took him several attempts. Most users did not know they hadn't submitted the answer. See Figure 3 for example of the yellow flash.

3. **Multiple options**

There are too many places to find a lesson. Twelve of fifteen times, users used the Lessons Quick Link.

4. **Saving score/format selection**

Users had trouble saving the score for a few reasons. Two that were successful were so because they exited the lesson and were prompted to save. Some users had problems saving because they used the wrong format; the user must choose the Flash version in order to save. The instructions about using Flash were not prominent and with four choices it can be confusing on what to pick. Three users chose a non-Flash version the first time and they all took the lesson using this version. Two of the users eventually noticed the disclaimer to use the Flash version to save.

5. **Lost data**

Scores are not saved automatically and users exited without having saved it. The tutorial had to be run again.

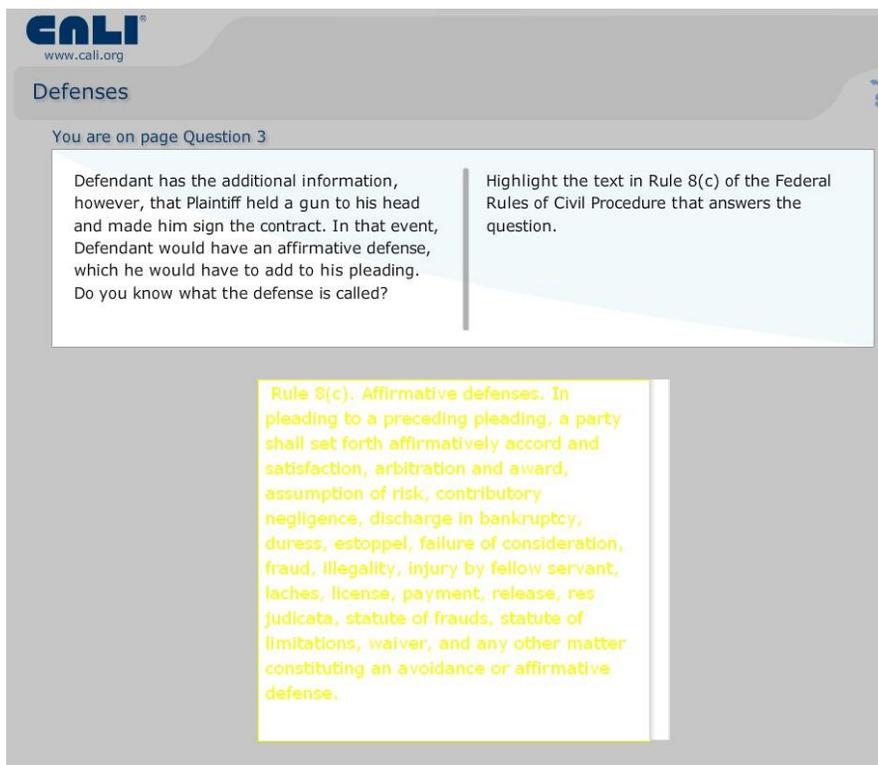


Figure 3 Yellow flash example

## 5.3 Recommendations

The following are recommendations of the CALI team:

- **Move Search to home page**  
Include the Search function on every page related to lessons. Allow for advance searching, based on 1L/2L+3L, author, etc.
- **Change method of submitting scores**  
This can be dealt with in one of two ways:
  - Clarify which format submits score. Make it very obvious to users that they need to use the Flash version to save the score. One user remarked that she thought the Flash icon would lead her to the Flash download site, and chose the HTML version instead.
  - Make it very obvious on the non-Flash versions that their score will not be recorded. One user briefly scanned the HTML introduction page, only later remembering that he had read something about submitting the score. He took the lesson, and was frustrated to learn that he would have to redo it entirely to have his score recorded.
- **Provide only one lesson format**  
Eliminate other formats, and use Flash as the only option (if a Flash version is available). One tester remarked that Flash was a standard format for interactive online products, and didn't see the need for other formats.
- **Include clearer navigation directions**  
Similar to the HTML version, the Flash lesson version should include clearer, more straightforward navigation directions.
  - Make it clearer when an error has occurred. A yellow flash was not enough to clue our users in that they needed to hit the "Grade" button to have their answer graded.
  - Make it apparent how many questions there are to answer and when a question has been answered.
  - Disable the "Next" button until an answer has been submitted.
  - Distinguish pages that have a question from those with just text. Many students will just be scanning for the questions.
  - Rename buttons [Grade --> Submit Answer; Score --> Save Score).
  - Be consistent with terms (e.g., save/upload).
  - Change the icons (e.g., help, home, etc).
- **Redesign home page**
  - Move the Top 10 lessons off the homepage. The home page is valuable real estate and people had to navigate off of it for every task with the exception of finding the Top 10 lessons of the week. Or compress the lists so users can expand them if they wish. Testers expressed an interest in the Top 10 lists, but didn't feel they wanted to browse every single one.
  - Move the Legal Education commons, TOOLS, and MediaNotes links off the homepage. Again, this is not content directed for the primary user (student) and it takes up valuable space on the site. One user commented, "I just thought they were ads and did not want to click on them."
  - Move mission to About page.
  - Change color of top menu. Some users never noticed this menu as the low contrast colors made it hard to see/read.
- **Provide better error recovery**  
For spelling errors in Search, suggest a term (for example, the "did you mean xyz" feature in Google).
- **Add additional Help topics**  
When trying to save scores, users looked to the Help screen for additional information and were unable to find the information.
- **Use consistent branding**  
Branding is not consistent across all sites and lessons. When you move from CALI's home page to one of their partner programs (e.g., MediaNotes), the look and feel completely changes; it is not clear that there is a relationship. In additions, the lessons lack the CALI feel.

## 6. References

1. <http://www2.CALI.org/>
2. Barnum, Carol M., “Usability Testing and Research”. 2002.

## Appendix

### Appendix A: E-Mail to Potential Testers

The CALI team recruited potential testers in a variety of methods, including Facebook and e-mailing personal contacts. The following is a sample e-mail sent to possible testers; each team member used some variation of this e-mail.

Hello Everyone:

Thank you so much for agreeing to help me recruit law students for my usability testing for my Usability class. My team is hoping to ask usability study participants to test on IIT's campus later this week, either Thursday, Friday, or Saturday.

I have attached a pre-study questionnaire that *must be filled out and returned to me* to be considered as a participant.

Please email me or call me (773.329.7531) if you have any questions related to the usability study or the attached questionnaire. Thanks, Kelly.

## Appendix B: Pre-Test Questionnaire

### Computer-Assisted Legal Instruction (CALI) Usability Test

Thank you for considering being a volunteer for our usability study at the Illinois Institute of Technology (IIT). The results from our usability test will be used to help improve a website's design, navigation, and overall ease of use.

The testing will take place on a mutually agreed upon time. The usability test will require no more than 1 hour and 30 minutes of your time and will take place on IIT's campus in Siegel Hall, 3301 South State, in the Usability Testing & Evaluation Center, room 219. For more information about the lab, you can visit <http://www.iit.edu/usability/>.

Please place a check next to the dates on which you are available, if any, and list times you are available.

Thursday, March 12 \_\_\_\_\_ Times available \_\_\_\_\_  
Friday, March 13 \_\_\_\_\_ Times available \_\_\_\_\_  
Saturday, March 14 \_\_\_\_\_ Times available \_\_\_\_\_

Please disregard the rest of the questionnaire if you are not able to attend one of the dates. Thank you again for your consideration.

**Please answer the following questions. We will use your answers to determine if you are eligible to be a participant in our usability study.**

Name: \_\_\_\_\_

Phone and email: \_\_\_\_\_

1. Age:  Under 21  21-30  31-40  41-50  51 or above  
2. Gender:  Male  Female  
3. Year in Law School:  1L  2L  3L

Please answer the following questions about your computer experience:

4. Do you have more than one (1) year's experience using a computer?

- Yes  
 No

If you answered "no," please disregard the remaining parts of the questionnaire.

5. Can you perform the following internet functions? Check all that apply.

- Using the forward button  
 Using the backward button  
 Clicking on a link  
 Using a search bar to find information

6. Please indicate how often you have used the website Computer-Assisted Legal Instruction (CALI)?

- Never  
 A few times  
 Routinely  
 Daily

7. Please write your planned area of legal specialization:

## **Appendix C: Facilitator's Script**

First of all, we'd like to thank you for coming. As you may be aware, we're testing the CALI website, which provides online lessons to law students. In order to make it as easy to use as possible, we'd like to get some input from the people who will be using it. And that's where you come in. We're going to ask you to perform some exercises that will give us some insight into how we can make the site easier to use.

Please remember that during these session, we are testing the ease of use of the CALI site, not the content itself, and especially not you.

As you can see, we will be recording you with a camera. In addition, we will be recording the computer screen so we can refer back to mouse clicks and movements around the site.

During the session, we would like you to think out loud. It would help us so much if you could tell us what you are thinking. For example, "I am clicking on this button because I expect it to perform (a sample function)."

At the end of the session, we will ask you to fill out a questionnaire and ask you a few follow up questions. We will use this information to recommend ways to improve the site.

Feel free to ask questions during the exercises if you feel the need. I can't guarantee that I can answer them during the exercise, but I'll do my best to answer them when you're finished.

### **Consent form**

Let's begin with the consent form. By signing this form, you give your consent to use your voice, quotes, and videotaped pictures, but not your name for the purpose of evaluating the site and showing the results of the testing.

### **Tasks**

Let's begin with the first scenario.

## Appendix D: Consent Form

### Purpose

A student group at the Illinois Institute of Technology has asked that you participate in a study of The Center for Computer-Assisted Legal Instruction's website (cali.org). By participating in this study, you will help us recommend ways to improve the website.

### Environment

The study will take place at the IIT Usability and Testing Laboratory, where you will be observed completing tasks on the CALI website.

### Information Collected

We will record your interaction with the website, ask you to fill out questionnaires, and interview you. We will use the information you give us to recommend ways to improve the CALI website.

### Recording

Your work with the website and the interview will be recorded. By signing this form, you give your consent to IIT to use recorded materials, with the exception of your name, for the purpose of evaluating the website and reporting the results of the testing.

### Breaks

You may take a break at any time. Simply inform the test administrator that you would like to take a break.

### Freedom to Withdraw

You may withdraw from this study at any time.

### Questions

You may ask questions at any time.

If you agree with the above terms, please indicate your acceptance by signing below.

Signature \_\_\_\_\_

Printed name \_\_\_\_\_

Date \_\_\_\_\_

## Appendix E: Test Scenarios

Note: Timeframe and Goals were not included with tester's version.

### Computer-Assisted Legal Instruction (CALI) Usability Test

The following scenarios are proposed for the CALI usability study. The participants will read the text below the scenario. The shaded, italicized sections are not for the user, but show the client what the team's goals are for the scenario.

#### Scenario 1

(Reminder- please "think out loud" as you process your actions.)

You are a first year law student wondering how you are going to learn all of the material from your first week of classes. A fellow student refers you to a website called CALI and tells you that it has legal lessons online. Search for the website, find and read a lesson, and return to the CALI homepage.

*Time frame: 7 minutes*

*Goals:*

- *Terminology- search for the site*
- *Navigation- find a lesson*
- *Navigation- go back to the homepage*
- *Design- look and feel of the site*

#### Scenario 2

(Reminder- please "think out loud" as you process your actions.)

You are a 2L and the professor discussed evidence in class today. Because the professor used various examples that left you unclear on the rules of evidence as it relates to hearsay, you are seeking clarification. Use CALI to find and read a lesson on hearsay. Return to the CALI homepage when you are finished.

*Time frame: 10 minutes*

*Goals:*

- *Navigation- find a lesson on a specific topic*
- *Terminology- finding specific legal terms*
- *Information- finding useful topical, useful information*

### Scenario 3

(Reminder- please “think out loud” as you process your actions.)

In class, your professor assigns you CALI lessons that correspond to the topics on the syllabus. For tomorrow’s class, you have been assigned a lesson called "How to Brief a Case." Read the case before you dash off to class. Return to the CALI homepage when you are finished.

*Time frame: 10 minutes*

*Goals:*

- *Navigation-find a lesson with a specific title*
- *Terminology-finding specific legal terms*
- *Information- finding information*

### Scenario 4

(Reminder- please “think out loud” as you process your actions.)

You are a 3L who completed a lesson last week, but you don't remember the name. You do remember that it was the most popular 3L lesson last week. Find the name of the lesson. Return to the CALI homepage.

*Time frame: 10 minutes*

*Goals:*

- *Navigation-find a lesson with a specific title*
- *Terminology-finding specific legal terms*
- *Information- finding information*

### Scenario 5

(Reminder- please “think out loud” as you process your actions.)

You were assigned a list of lessons that needed to be completed by mid-terms, which are tomorrow. To get homework credit, you must provide a list of the completed lessons and the scores you received. Find your completed lessons/scores and print the page. Return to the CALI homepage.

*Time frame: 10 minutes*

*Goals:*

- *Navigation-completed lessons (My Lessons – Runs)*
- *Terminology-finding specific legal terms*
- *Information- finding information*

**Scenario 6**

(Reminder- please “think out loud” as you process your actions.)

For your Criminal Law class, you’ve been assigned a lesson called “Defenses” by Scott Burnham.

Take the lesson and save the score. Do not worry about your score; we are testing the lesson and not your knowledge. Return to the CALI homepage.

*Time frame: 15 minutes*

*Goals:*

- *Navigation-find a specific lesson, navigating a lesson, saving score*
- *Terminology-finding specific legal terms*
- *Information- finding information*

## Appendix F: Note Taker and Facilitator Checklists

### Note Taker Checklist

#### Pre-test

Gather observation form, writing instrument
---

#### Tasks

Start recording time when scenario is finished being read
Stop recording time when facilitator calls it
Silently observe
Record every action of participant
Include direct quotes when possible
Observe body language (e.g., facial expressions)
Take note of areas where participant struggles/completes easily

#### Post-test

Review notes and clear up any illegible notes
---

### Facilitator Checklist

#### Pre-Participant Arrival, Welcome

Test camera and Camtasia
Open web browser
Gather scenarios, post-test questionnaire, writing instrument
Pull/collect screening form
Greet participant

#### Consent Forms, Pre-Test Questionnaire

Read script
Review consent form
Pre-test questionnaire (name, e-mail)

### Tasks

	Read scenarios out loud
	Encourage talking out loud
	Offer reassurance when tester is struggling
	Ask for clarification on questionable thoughts/actions
	Interrupt if task is taking too long.
	Call time when task is complete

### Post Task

	Post-test questionnaire
	Introduce to team
	Thank participant

### After Tester Leaves

	Log out of account
	Clear browser history

## Appendix G: Debriefing Survey

### Debriefing Survey Computer-Assisted Legal Instruction (CALI) Usability Test

This questionnaire is designed for you to tell us how you feel about the website you used today. Please circle the number that best represents how you feel about each topic.

1. How easy or difficult was it to learn the CALI website?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Very Easy	Easy	Neither easy nor difficult	Difficult	Very Difficult

2. How do you rate the the efficiency of the CALI website?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Very Easy	Easy	Neither easy nor difficult	Difficult	Very Difficult

3. How easy or difficult was it to recover from an error on the CALI website?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Very Easy	Easy	Neither easy nor difficult	Difficult	Very Difficult

4. How do you rate the overall ease of use the CALI website?

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Very Easy	Easy	Neither easy nor difficult	Difficult	Very Difficult

5. How do you rate the overall navigation of the CALI website?

1	2	3	4	5
Very Easy	Easy	Neither easy nor difficult	Difficult	Very Difficult

6. How easy or difficult was it for you to find the information on the CALI website?

1	2	3	4	5
Very Easy	Easy	Neither easy nor difficult	Difficult	Very Difficult

7. What did you like most about the CALI website?

8. What did you like least about the CALI website?

9. What would you tell the designers and developers of the site to change about the CALI?

10. Additional Comments:

## Appendix H: Observation Form

### Observation Form Computer-Assisted Legal Instruction (CALI) Usability Test

Participant:

Date:

#### Scenario 1

You are a first year law student wondering how you are going to learn all of the material from your first week of classes. A fellow student refers you to a website called CALI and tells you that it has legal lessons online. Search for the website, find and read a lesson, and return to the CALI homepage.

*Time frame: 7 minutes*

*Goals:*

- *Terminology- search for the site*
- *Navigation- find a lesson*
- *Navigation- go back to the homepage*
- *Design- look and feel of the site*

*Measurement criteria:*

- *User can find a lesson on the CALI site.*
- *User can return to the CALI homepage.*

Start Time:

End Time:

Task	Completed
Found site	
Found lesson	
Returned to home page	

Observations

#### Scenario 2

You are a 2L and the professor discussed evidence in class today. Because the professor used various examples that left you unclear on the rules of evidence as it relates to hearsay, you are seeking clarification. Use CALI to find and read a lesson on hearsay. Return to the CALI homepage when you are finished.

*Time frame: 10 minutes*

*Goals:*

- *Navigation-find a lesson on a specific topic*
- *Terminology-finding specific legal terms*
- *Information- finding useful topical, useful information*

*Measurement criteria:*

- *User can locate a lesson on hearsay.*
- *User can return to the CALI homepage.*

Start Time:

End Time:

Task	Completed
Lesson > Lesson by Subject > 2L/3L > Evidence	
Returned to home page	

Observations

### Scenario 3

In class, your professor assigns you CALI lessons that correspond to the topics on the syllabus. For tomorrow's class, you have been assigned a lesson called "How to Brief a Case." Read the case before you dash off to class. Return to the CALI homepage when you are finished.

*Time frame: 10 minutes*

*Goals:*

- *Navigation-find a lesson with a specific title*
- *Terminology-finding specific legal terms*
- *Information- finding information*

*Measurement criteria:*

- *User can locate the lesson by title.*
- *User can return to the CALI homepage.*

**Start Time:**

**End Time:**

Task	Completed
Lessons menu > Search	
Returned to home page	

Observations

### Scenario 4

You are a 3L who completed a lesson last week, but you don't remember the name. You do remember that it was the most popular 3L lesson last week. Find the name of the lesson. Return to the CALI homepage.

*Time frame: 10 minutes*

*Goals:*

- *Navigation-find a lesson with a specific title*
- *Terminology-finding specific legal terms*
- *Information- finding information*

*Measurement criteria:*

- *User can locate lessons from previous weeks.*
- *User can identify which lessons are 3L.*
- *User can return to the CALI homepage.*

**Start Time:**

**End Time:**

Task	Completed
Top 10 2L/3L Lessons Last Week	
Returned to home page	

Observations

### Scenario 5

You were assigned a list of lessons that needed to be completed by mid-terms, which are tomorrow. To get homework credit, you must provide a list of the completed lessons and the scores you received. Find your completed lessons/scores and print the page. Return to the CALI homepage.

*Time frame: 10 minutes*

*Goals:*

- *Navigation-completed lessons (My Lessons – Runs)*
- *Terminology-finding specific legal terms*
- *Information- finding information*

*Measurement criteria:*

- *User can log in to CALI website*
- *User can find lessons on the My Lessons page.*
- *User can return to the CALI homepage.*

**Start Time:**

**End Time:**

<b>Task</b>	<b>Completed</b>
Successful login	
My Lessons - Run	
Returned to home page	

Observations

### Scenario 6

For your Criminal Law class, you’ve been assigned a lesson called “Defenses” by Scott Burnham. Take the lesson and save the score. Do not worry about your score; we are testing the lesson and not your knowledge. Return to the CALI homepage.

*Time frame: 15 minutes*

*Goals:*

- *Navigation-find a specific lesson, navigating a lesson, saving score*
- *Terminology-finding specific legal terms*
- *Information- finding information*

*Measurement criteria:*

- *User can log in to the CALI site.*
- *User can find the lesson.*
- *User can complete the lesson.*
- *User can save the score.*
- *User can return to the CALI homepage.*

**Start Time:**

**End Time:**

<b>Task</b>	<b>Completed</b>
Found lesson – describe method below	
Navigate from page to page	
Answered questions: highlight answer, radio buttons	
Saved score	
Returned to home page	

Observations

## Appendix I: Heuristic Evaluation

### Visibility of system status

- Users have absolutely no sense of how many questions they are expected to answer & how far they've progressed in the tests.

### Match between system and the real world

- The long pages make users feel that they need to scroll, which is a problem, because the important information is at the top.
- Save and Upload. The tooltip over the Score button and the entire ScoreSave FAQ section uses "save", but the exit lesson button prompt and the certificate that appears after you click Score use "upload". Users are more used to saving.
- Given that the target user is a student, the Grade button can be misleading. Grade for students is how you're doing/you've done, but here grade is what you click to submit an answer.

### User control and freedom

- Instructions in lessons are not clear. Users must read introductions, then return to the table of contents, then progress in the lesson. Users should be able to progress without backtracking.

### Consistency and standards

- The 3 different options for the lessons take users to the same page.
- The test aesthetics look nothing like the site aesthetics.
- Sometimes the answer options are within the white space, sometimes below it. (Firefox)
- Sometimes you go to the next question automatically, sometime you don't.
- The three other sites look nothing like the CALI site. There's no branding.

### Error prevention

- What do people want to do at this site? They want to use the tests? So why is it so hard to find them?
- Sometimes clicking options in the drop-downs takes you to a site with no header bar. You cannot redo your choice. (Classcaster, Past Conferences)

### Recognition rather than recall

- Why are there instruction for clicking on the images? Users should know that those are links.
- When using the tests, the action box on the lower right is highly unintuitive. I had no idea what the icons meant.

### Flexibility and efficiency of use

- The quick links on the right make easy navigation.

### Aesthetic and minimalist design

- Lots & lots of scrolling. Lots.
- The buttons at the top look like advertisements.

### Help users recognize, diagnose, and recover from errors

- If users enter the wrong password, they see a picture of a crying baby. What does that have to do with law?
- There's no "Home" link. The CALI link takes you back to the home page, but is that enough?

### Help and documentation

- Help menus are available in the lessons.

## Appendix J: Team CALI

### Team Strengths

#### ***Strength: Debriefing***

Our debriefing sessions with the testers were strong. Once the participant had completed the debriefing survey, we then, as a whole testing group, asked questions of the user to flesh out details on the debriefing questionnaire that were not clear or detailed. Additionally, note-taking observers asked clarifying questions from their notes, asking participants to explain something they said or did. Once the testing was completed, we sat down as a team and shared impressions of the testing and the information collected and we decided upon next steps.

### Team Areas for Improvement

#### ***Improvement: Building Rapport***

Over the course of the tests, the team's attention to rapport-building dwindled as we became more familiar with the testing process. As the testing proceeded, our team became a bit more casual in our greetings to the participants, though not unprofessionally so. The team should improve upon this in future studies and keep in mind that just because we are more comfortable with the testing process taking place, our users that are walking in the door have a fresh perspective on this situation each time. This might be due to the quick succession of testing.

#### ***Improvement: Disclosure of Non-Affiliation with CALI***

One question that needed to be clarified often with the participants was the idea that our testing group was not in any way affiliated with the CALI website. This clarification was made verbally in most of the tests, however, one recommendation for improvement of our testing process would to notify people in advance of future testing. This could be done in one or more of these documents: the initial recruitment letter, the screening questionnaire, the facilitator's script, and the debriefing questionnaire. Once we clarified with the user that we were not in any way affiliated with CALI, there was visible relief on participant's faces and verbal expressions of relief. Once it was established that we were not connected to CALI, the feedback that we gained was much more honest and less filtered in the debriefing.

#### ***Improvement: Scenario Wording***

Our scenarios directed users to find and read lessons. By this, we meant we wanted them to read the lesson descriptions. However, several of the testers took this to mean that they should take the lessons. We needed to clarify this for them during the testing. We assumed knowledge that they did not have. Next time we should be conscious of articulating exactly what we want.

We also had a scenario that said to find the most popular 3L lesson. We meant for the tester to the top lesson from the 2L/3L list, but some took this more literal and were looking for a list that split the 2L/3L list apart.

### Collaboration Tools

Team CALI used a variety of tools to coordinate this usability study. Tools we used included:

- Blackboard
- E-mail
- GChat
- Google Documents
- Telephone

