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# 3.091, d'Arbeloff and “Students as Scholarly Researchers”

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# Outline

- A brief history of the project
- 3.091 Fall 2007
- Assessment
- Assessment results (so far)
- Next Steps

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# Brief History

- 3.093: Information Exploration – Becoming a Savvy Scholar
  - Fall 2006
  - [3.093 page on OCW](#)
  - Pre/post self-confidence surveys
  - Assignments
  
- Past presentations on this
  - [All staff – May 2007](#)
  - [Spring Seminar – June 2007](#)
  - [PS staff – Dec 2007](#)

**HOW IS THIS SCALABLE?**

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# 3.091 prep – Summer 2007

- Meetings
  - Prof. Donald Sadoway
  - Newly assigned staff from the Teaching and Learning Lab (TLL)
  
- Results
  - The “treatment” was defined
  - Pre/post surveys
    - Includes self-confidence survey used in 2006
    - Administered by the TLL
  - 3 homework assignments, turned in and graded by the TAs
    - Answers provided for their grading
  - Longitudinal study
    - Survey 3.091 students as they continue their academic careers

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## 3.091 treatment

- Video tutorials
  - “Watch to do your homework”
    - [Library databases vs. Google](#) (4:57)
    - [Finding Articles on a Topic](#) (5:36)
    - [Getting to the Full Text](#) (4:24)
    - [Web Of Science](#) (3:28)
    - [Tracking a Citation using Web of Science](#) (5:18)

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# 3.091 treatment

## ■ Video tutorials

### □ “To learn more”

- [Introduction to the MIT Libraries](#) (2:47)
- [The Scientific Publication Cycle](#) (3:12)
- [The Scientific Paper](#) (2:58)
- [Primary and Secondary Sources](#)
- [Using Barton, the MIT Library catalog](#) (includes how to find items in the MIT Libraries) (7:31)
- Database Search Tips
  - [Part 1: Keywords](#) (3:05)
  - [Part 2: Boolean Operators](#) (4:06)
  - [Part 3: Truncation](#) (1:47)
  - [Part 4: Subject Headings](#)(4:39)
  - [Part 5: Fields and Limits](#) (3:58)
- [Introduction to Compendex and Inspec](#) (3:37)

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# 3.091 treatment

## ■ Lecture

- Mentions the importance of primary sources in the first week of class
- Oct 5 Lecture, now featured in [TechTV](#)
  - Demonstrates how to find an article in Inspec

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# 3.091 treatment

## ■ Homework

- Helps to emphasize importance – graded!
- Worked with TAs
  - Revised as we learned more, made wording clearer
  - Students still don't read instructions
  - TAs idea to make students actually read an article
- Included “model answers” as part of the treatment
  - [http://web.mit.edu/3.091/www/archives\\_courseworkFT07.htm](http://web.mit.edu/3.091/www/archives_courseworkFT07.htm)
  - Assignments 5c, 8b, and 12b



# Were the videos watched?

libraries.mit.edu  
**Content Drilldown**  
 /tutorials/video/classes/3.091/

Aug 30, 2007 - Dec 15, 2007  
 Comparing to: Site



15 URLs were viewed a total of 2,570 times

## Content Performance

Pageviews	Unique Pageviews	Time on Page	Bounce Rate	% Exit	\$ Index	
<b>2,570</b> % of Site Total: 0.21%	<b>2,142</b> % of Site Total: 0.24%	<b>00:03:36</b> Site Avg: 00:01:41 (114.63%)	<b>38.10%</b> Site Avg: 56.42% (-32.48%)	<b>18.48%</b> Site Avg: 40.61% (-54.49%)	<b>\$0.00</b> Site Avg: \$0.00 (0.00%)	
URL	Pageviews	Unique Pageviews	Time on Page	Bounce Rate	% Exit	\$ Index
/articlestopic/	620	483	00:03:30	27.78%	15.00%	\$0.00
/webofsci/	456	374	00:04:36	58.82%	24.56%	\$0.00
/citationtracking/	397	329	00:05:13	58.82%	30.98%	\$0.00
/googlevsdatabases/	315	277	00:03:12	20.00%	11.43%	\$0.00
/fulltext/	267	226	00:03:55	18.18%	16.48%	\$0.00
/barton/	180	155	00:02:05	12.50%	16.11%	\$0.00

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## 3.091 Assessment - TLL

- Pre-survey
  - Administered late September
  - Incentive – 2 movie passes
    - Hard to distribute
  - 369 responses
- Post-survey
  - Administered mid-December, before finals
  - Incentive - \$15 TechCash
  - 418 responses
- Final report

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# 3.091 Assessment – TLL results

## ■ High School Usage

- The **majority of freshmen arrive at MIT unprepared to conduct scholarly research**. They seldom used their high school or public libraries, had minimal experience with online research tools, and primarily relied on Google for searches. The data highlight the **need for students to gain an awareness of the importance of scholarly research skills** and have the opportunity to develop them in a meaningful context.

## ■ Beliefs about Scholarly Research Skills

- Students strongly support including scholarly research skills in 3.091. They believe the **skills are valuable for freshmen to learn and will be relevant to their academic work at MIT**.

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# 3.091 Assessment – TLL results

## ■ Impact

- Students reported that the *Scholarly Researcher* curriculum had an impact on their online search skills in terms of awareness, usage, and increased effectiveness. Students indicated that **as a result of the scholarly research training they are more aware of the large number of resources they can access online, more likely than before to use the library's online research tools to identify relevant materials, and more able to function effectively as a researcher.** Students reported gains at statistically significant levels in 15 of the 18 library skills.
- At the end of the semester, 42% reported using research tools (online library databases) during the semester for class assignments other than 3.091. In addition, 29% indicated use of such tools to look up articles unrelated to MIT class assignments. Given that pre-survey responses suggested that many first semester freshmen possessed limited knowledge of online skills, these usage responses are encouraging: **during the semester, students had begun to apply what they learned.**

# 3.091 Assessment – TLL results

Table 1

Study Behavior Related to Learning the *Scholarly Researcher* Content

Number of recommended tutorials watched*	Time spent viewing video tutorials prior to completing assignment*	Time spent on <i>scholarly research</i> problems**
Never watched: 36%	0 minutes: 21%	15 minutes: 16%
Watched a few: 32%	15 minutes: 56%	30 minutes: 34%
Watched 50% or more: 32%	30 minutes: 12%	45 minutes: 17%
	45 minutes or more: 11%	1 hr. or more: 31%

36% (150/416) reported they never watched the recommended videos, yet only 21% (88/481) reported zero minutes viewing video tutorials. The discrepancy may be due to ambiguity in the wording.

\*\*39% reviewed solutions to the scholarly research problems

# 3.091 Assessment – TLL results

**Table 2**  
**Beliefs about Scholarly Research Skills**  
**Profile of Scale, Scale Items and Relevant Non Scale Items**

<b>Scale and Scale items</b>	<b>N</b>	<b>Mean (SD)</b>
<i>beliefs about scholarly research skills scale (coefficient alpha = .87)</i>	415	5.48 (1.08)
15d I believe the scholarly research skills I learned will be useful during my undergraduate experience.	417	5.67 (1.31)
15e I believe knowing scholarly research skills will be of value beyond my academic work.	418	5.46 (1.33)
15f I believe scholarly research skills are valuable skills for freshmen to learn.	418	5.72 (1.26)
15g Knowing how to conduct scholarly research plays an important role in one's ability to think critically as a student.	417	4.88 (1.52)
15h Knowing how to conduct scholarly research plays an important role in one's professional life in judging the credibility of information.	417	5.67 (1.26)
<b>Relevant Non Scale Items</b>		
15a I see the value of introducing scholarly research skills into 3.091.	418	5.13 (1.59)
15b As a result of the scholarly training, I gained an appreciation for primary sources.	418	4.60 (1.70)
15c I believe the scholarly research skills I learned will be relevant to my academic work at MIT	418	5.73 (1.30)

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# What we learned

- Students support learning about the libraries/information in 3.091
- Learning these skills in 3.091 has had an impact on their online search skills
- Contradiction in data
  - Strong beliefs and impact, but less enthusiastic about instruction and learning experience
  - Important to learn, but not that exciting

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# What we learned

- “...scholarly research skills can be successfully integrated into a fast paced, content specific course” like 3.091



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# What's next?

- Permanent inclusion in 3.091
  - Not an add-on, part of the syllabus
  - Continue with pre/post surveys to compare data
  - Update videos
- Approach 5.111/112 – spring/summer 2009

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# What's next?

- Longitudinal study
  - Administered Spring 2008
  - Survey plus performance task
  - 35 volunteers who took 3.091 in Fall 2006
  - Incentive - \$35 TechCash for one hour
  - Performance task graded by librarians
  - Will repeat this in spring 2009 using volunteers from 3.091 Fall 2007

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# Interesting tidbits from performance task grading

- Used Wikipedia or other encyclopedias as starting point, didn't cite that as a source
- Searched Google for “find articles” or “mit libraries”
- Usually searched “Vera” for search terms.
  - Don't use Vera as it is intended.
- Use databases that are familiar, regardless of results.
  - Examples: jstor, ProQuest
- For some, assumptions are made.
  - “I figured a medical organization would have written on this, so I searched for a medical organization”
  - “this author's name came up, so I thought he must be an expert and I searched just for him”.

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# Questions?

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