Developing an Information Literacy-Intensive Forensic Science Course

Laura Sare,* Sarah Bankston,* and Jeffery K. Tomberlin,** Texas A&M University

* University Libraries, Texas A&M University ** Department of Entomology, Texas A&M University

INTRODUCTION

Senior-level Forensic Science writing class needed to develop research skills.

METHODS and MATERIALS

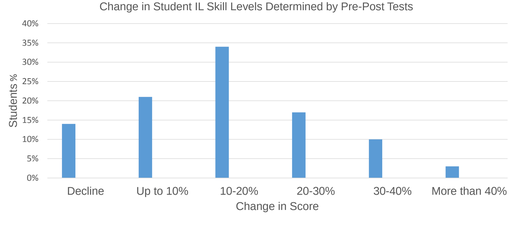
1 credit-hour information literacy (IL) class developed collaboratively with director of forensic and investigative science program.

Curriculum and assignments developed by science and government information librarians.

- Dissected scientific article
- Dissected case law
- To cite or not to cite
- Differences between databases
- Critical appraisal of article and related case

RESULTS

The majority of students (75%) showed improvement in information literacy (IL) skill levels by the end of the course. Students initially scoring lower than the cohort average on a pre-test appeared to gain the greatest benefit. Results suggest this type of instruction could serve as a baseline for undergraduate science programs seeking to improve how students utilize scientific and legal information.
The graphs below show growth following a semester-long information literacy course focused on forensics-related information.



DISCUSSION

Forensic scientists have unique information needs due to the nature of their discipline that combines both science and law. Forensic scientists must know scientific methods as well as how science is used in the legal system.

Rubric for Student Progress

Outcome	*Beginning (1)*	*Developing (2)*	*Proficient (3)*
1. Understand sections of a scholarly article/legal case and can summarize based on those sections	Summary is not organized to follow the sections of a scholarly article/legal case and student does not include results/conclusions from the article in the summary.	Summary is organized to follow the sections of a scholarly article/legal case or student includes results/conclusions from the article in the summary.	Summary is organized to follow the sections of a scholarly article/legal case and student includes results/conclusions from the article in the summary.
2. Provide appropriate attribution	Can neither cite appropriately in the body of the text nor generate the reference correctly.	Can either cite appropriately in the body of the text or generate the reference with up to two content or format errors..	Can both cite appropriately in the body of the text and generate the reference correctly.
3. Understand what a database is	Does not report using a specific database.	Uses a database, but either does not demonstrate that they understand what a database is or struggles to explain the information source they are using.	Uses a database and clearly explains the information source they are using.
4. Choosing an appropriate resource (database) to search in?	No	Yes, but reason given suggests they do not understand the content of the source they chose.	Yes
5. Are they properly describing why they selected the resource (article) they used?	No	Reason the source they selected was chosen was invalid or inappropriate.	Yes
6. Did they use some sort of search strategy to help focus results? (i.e., synonyms)	Rudimentary search string (keyword or two) and no database filters	Used Boolean operators, synonyms, or database filters, or readjusted an unsuccessful strategy	Used advanced Boolean logic or a combination of multiple strategies (i.e., filters + readjusted after unsuccessful search)

CONCLUSIONS

The main goal of information literacy instruction programs is to foster lifelong learning. As sciences continue to evolve rapidly, those involved in the field will need skills for lifelong learning to become and stay relevant. Educators in scientific disciplines can leverage the proficiencies of the academic library community to do this.

NIJ funding (Grant 2016-R2-CX-0054) will allow for the development of these materials as modules to be used by practitioners in crime labs.

REFERENCES

ACRL (Association of College & Research Libraries). 2016a. Information literacy standards for science and engineering/technology. http://www.ala.org/acrl/standards/infolitscitech

McClurg, C., S. Powelson, E. Lang, F. Aghajafari, and S. Edworthy. 2015. Evaluating effectiveness of small group information literacy instruction for undergraduate medical education students using a pre- and post-survey study design. *Health Information & Libraries Journal* 32 (2): 120-130. doi: 10.1111/hir.12098.

Pritchard, P. A. 2010. The embedded science librarian: Partner in curriculum design and delivery. *Journal of Library Administration* 50 (4): 373-396. doi: 10.1080/01930821003667054.

Scaramozzino, J. M. 2010. Integrating STEM information competencies into an undergraduate curriculum. *Journal of Library Administration* 50 (4): 315-333. doi: 10.1080/01930821003666981.

Simonsen, Jenni, Laura Sare, and Sarah Bankston. “Creating and Assessing an Information Literacy Component in an Undergraduate Specialized Science Class.” *Science & Technology Libraries* 36:2 (2017): 200-218. DOI: 10.1080/0194262X.2017.1320261

Stoeffler, S. and T. Zdorkowski. 2011. A forum on forensic science education: Do university forensic science education programs meet the needs of forensic laboratories and how can forensic laboratories and universities work together to improve forensic science education and practice? Paper presented at Annual Conference of the American Academy of Forensic Sciences, Chicago, IL.

Acknowledgements
Additional funds for SB, LS, & JKT were provided by the National Institute of Justice, Office of Justice Programs, the United States Department of Justice through 2016-R2-CX-0054.
Points of view in this document are those of the authors and do not necessarily represent the official position or policies of the United States Department of Justice.