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# The Effectiveness of a Hands-On Systematic Review Course: Findings from a Pilot Project



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## Background

Librarians from Becker Medical Library identified a need for a systematic review search strategy course that emphasizes hands-on exercises to enhance learning outcomes. We hypothesized that using a hands-on, mixed-pedagogy model course is an effective way to teach librarians how to design and document search strategies for systematic reviews. To determine the efficacy of this training model, participants completed skills, perceived confidence, and knowledge-based assessments before, during, and after the course.



## Results

There was a statistically significant ( $p = .0248$ ) difference between the pre- and post-test scores with a mean difference (improvement) of 28.89. The pre-course test average was 66% while the post-course test average was 95%, demonstrating that the students finished the course more knowledgeable about building systematic review searches.

Students also reported having more confidence in designing systematic review search strategies (2.6 average Likert scale score, to 4.2 average Likert scale score) and in managing systematic review projects (2.16 average Likert scale score, to 4.05 average Likert scale score).

The use of Socrative.com to quiz and poll students was also successful. 80% of students agreed that using Socrative enhanced their learning experience, and 93% agreed that it helped to make the lessons more interactive. Socrative data also shows the students consistently answered quizzing and polling questions with participation rates ranging from 88-100%.

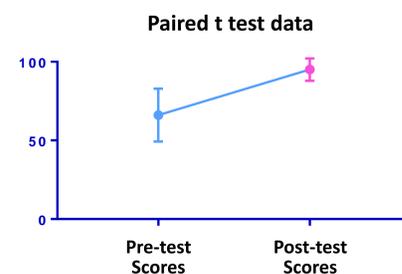
Course feedback was generally positive with all 18 students giving the course an "A" grade, and all students reported that they would recommend the course to a colleague.



## Methods

A pilot version of the course was offered to librarians in April 2017 for MLA CE credits and no registration fee. The content of the course was developed based on current systematic review guidelines and best practices. Lessons emphasize hands-on activities with the goal that students will feel confident and be capable of independently designing and conducting systematic review search strategies. To determine the effectiveness of this model, including teaching methods and activities, students were assessed before and after the course. Students completed pre and post-tests to measure differences in their knowledge, skills, and perceived confidence pertaining to designing a systematic review search. To encourage student engagement and enhance formative learning, intermittent quizzes were delivered using Socrative.com. Finally, students were asked to complete a 1-week post-course survey to assess potential benefits and drawbacks of the training model and course.

### Pre- and Post-Test Assessment Scores



### Feedback Questions

Q: What was the most helpful aspect of the course?

"The hands-on exercises."

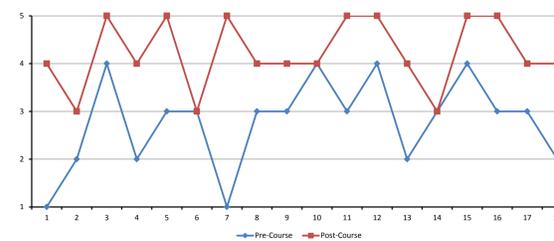
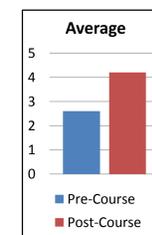
"Real-life examples that we got to practice on."

"The exercises were great. Making it so organized and seamless was great because then I could concentrate on the content."

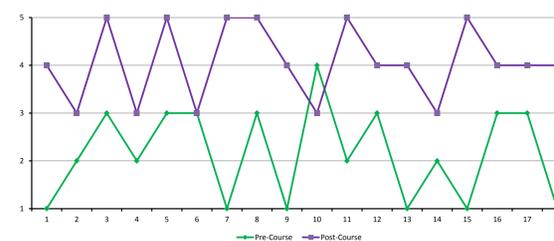
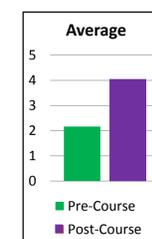
"The course was so well thought out and the instructors were so knowledgeable."

### Confidence Scale

Q: How confident are you in your ability to design and execute a systematic review literature search?



Q: How confident are you in your ability to manage a systematic review project from beginning (initial patron contact) to end (sending final results)?



1 = Not at all confident ; 2 = Not Confident ; 3 = Somewhat confident ; 4 = Confident ; 5 = Very Confident

## Conclusions

Using a mixed-pedagogy model that emphasized group and individual hands-on exercises proved effective and practical at teaching librarians how to design systematic review search strategies. Though we are reporting data from one small cohort of students, we believe that our pilot course had demonstrated the effectiveness of the training model. Comments from participants such as "I am extremely thankful for this course and it included some of the most relevant info I've ever gotten out of a continuing education course" and "I can tell Becker and WashU is invested in providing high-quality systematic review service" suggest that the course met their needs and expectations. Moving forward, the course will be available in August 2017 for CE credit and registration opens in June.

## Acknowledgements

We would like to thank our first cohort of students for participating in the pilot version of the course! We would also like to thank Debbie Thomas, Laura Swofford, Robert Altman, and Marcy Vana (all from Becker Medical Library) for providing additional assistance and support for this project.

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