

Measuring the Effect of a Library Training Module on First Year Medical Students

SLIDE 1 Introduction

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BACKGROUND

In 2001, the College of Medicine faculty at the University of South Florida initiated a three week long orientation program to introduce first year medical students, and Nurse Ph.D.'s, to the demands of their profession and the knowledge and skills they will need to succeed as a health professional.

Their program, The Profession of Medicine: An Integrated Approach to Basic Principles, included faculty lectures and presentations on the topics of ethics and professionalism, basic science principles, evidence-based medicine (EBM), taking of the medical history, the medical article, medical oath, humanities, cultural competency, and study skills.

The Health Sciences Library has been part of the College of Medicine since it was founded in 1971 and the importance of the library as a partner in supporting the curriculum and research needs of the students and faculty is undeniable. The medical literature plays a key role in medical education and is one of the building blocks of a successful practice.

Having the knowledge and skills to effectively access the medical literature for research, diagnosis, and treatment, and to retrieve accurate, relevant data are requisite to the informed, practicing physician. To this end, the Shimberg Health Sciences Library participated in the orientation by developing a Library Instruction Module, Information Resources, Library and Computer.

The purpose of this study is to measure the effect of the Library Instruction Module in three key areas, comfort, knowledge, and skills in using a medical library and its resources. This presentation is a report of the first two years.

SLIDE 2 Profession of Medicine

The Profession of Medicine program focused on “State of the Art” presentations that were developed from and supported by the collective content of the curriculum.

“State of the Art” concerned four topical themes:

- myocardial infarction
- duodenal ulcer
- breast cancer
- pulmonary insufficiency resulting from premature lung

For each topic, a faculty member delivered to the students a one-hour “State of the Art” clinical presentation as it would have been given in 1980, based on the research literature available at that time.

These presentations established the subject context for the students’ to develop their own “State of the Art” presentations, based on the most current research literature.

Other program topics relevant to research included:

- The Medical Article - presentations/discussions on the basics of reading a medical article and a review of the various types of articles, i.e. randomized controlled trials, case reports, review, etc.
- What’s the Evidence? An intro to EBM - that summarized the principles of EBM: etiology, diagnosis, treatment, and prognosis.

SLIDE 3 Library Instruction Module

During the planning of the inaugural orientation program, it was determined that the role of the library was to develop a presentation of their available resources and services and to integrate the most relevant of those into the curriculum assignments.

The Library Instruction Module consisted of three sessions totaling seven hours of presentation, instruction, online, and hands-on literature searching in a classroom environment. Emphasis was on how to use the library catalog and resources, both print and online, and how to search the medical literature.

The goal was to improve the students' comfort, knowledge, and skills in:

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Mastering these criteria would greatly assist the students in completing their "state of the art" presentations to be given at the close of the orientation.

SLIDE 4 Purpose of the Study

We wanted to know if the Library Instruction Module was successful.

At what level? What criteria?

So, the purpose was to Measure the effect on the students'...

Comfort – with the library environment and technology

Knowledge – of resources and the process of research

Skills – in searching and accessing information

SLIDE 5 **Research Design**

To assess the effect of the Library Instruction Module, a survey was developed to measure these three.

The Library Resources Component survey consisted of:

11 questions, using a 5 point likert scale response. Self-reported by the students, rating themselves 1 - 5; poor, fair, good, very good, excellent.

Questions designed to measure their levels of Comfort, Knowledge, Skills.

The Pretest survey was administered prior to any instruction.
The Posttest survey, at end of the orientation program.

We have collected 3 years of data.

This study reports 2001 and 2002, only.

SLIDE 6 The Survey

The Library Resources Component Survey.

This slide shows abbreviated questions within the measured criteria categories; Comfort, Knowledge, Skills.

Paraphrase key topics within each category.

Statistical tests performed

All of our tests were statistically significant in that the difference between the two groups (pre vs. post mean scores) is a real difference, one that is not explainable by chance or random variation alone.

To stay within the limits of a 12 minute format, this presentation is reporting only the t-test analysis, to test for the differences in mean scores. We performed a t-test that compared the group means for each item on the survey.

Each of the following graphs show the MEANS, pre and post, reported by the survey. When we compared the pretest means of the group with the posttest means, we found that students scored higher on the measures of questions from the three categories, Comfort, knowledge, and Skills, AFTER the presentation of the Library Instruction Module than they did BEFORE the Module.

SLIDES 7 – 12 (graphs)

SLIDES 7 – 8

Comfort Levels questions were designed and measured as a critical criteria to the students' eventual success in acquiring knowledge and skills.

SLIDES 9 – 10

Knowledge Levels questions sought to measure their knowledge of how databases are constructed and how their content is defined, thus allowing the searcher to achieve better results, faster and with less effort.

SLIDES 11 – 12

Skills Levels questions measured their skills in navigating the constructs and architecture of databases. We wanted them to be searchers who were competent with changing interfaces, options, features, etc., and not to default to keyword searching that often lacks precision and specificity.

For both years, and for all measures, we found the post-MEAN was higher than the pre-MEAN, indicating change, over time, in each item, as a function *(presumably) of the library module. As a group, students reported significant improvement in Comfort, Knowledge, and Skills levels in using the medical library and its online resources.

Results were positive in all categories.

SLIDE 13 CONCLUSION

Participants reported improvement in their:

- comfort level with using a medical library and online resources
- knowledge of online search strategies and techniques
- skills performing research

Good for Med I's

Good for the Library

Future Applications

- Other colleges
 - Nursing, Public Health, School of Physical Therapy

Future Trends

- Continuing Study. 2003 data already collected
- Survey questions may change
 - As program content changes
 - As technology and resources change
 - To fit applications to other colleges
- Computer administered survey
 - Collect statistics one-on-one
pretest/posttest for each student, not the group

DISCUSSION

The POM orientation program has been very successful in meeting its objectives in preparing new students for a career in medicine and the library has played an important supporting role. The participation and contribution of the library will continue and will most assuredly evolve as the focus and needs of the program change and mature.

The library pretest/posttest survey will continue to be administered and may be subject to change as the curriculum content and library resources and services change.

As this program continues, we are watching for changes in the statistical gap between the pretest and posttest results. Over time, increased technical and information literacy competency of each year's class of incoming Med I's, simplification of database interfaces, and standardization of search techniques, language, limits, and other technical factors that are yet to be revealed may reduce the dramatic MEANS differences of these first two years.