Evidence Based Library and Information Practice

Evidence Summary

Interactive, Web-based Information Skills Tutorial Well Received by Graduate Students in Health and Social Care Research

A review of:
Grant, Maria J., and Alison J. Brettle. "Developing and Evaluating an Interactive Information Skills Tutorial." Health Information and Libraries Journal 23.2 (June 2006): 79-86.

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Received: 28 November 2006 **Accepted:** 23 January 2007

Abstract

Objective – To determine whether a newly developed interactive, Web-based tutorial on OVID *MEDLINE* was acceptable to students, and to identify whether the tutorial improved students' information skills.

Design – Objective and subjective assessment within a small cohort study.

Setting – An evidence based practice module within a Master's in Research (MRes) program at the University of Salford, UK.

Subjects – A total of 13 usable evaluations were received from graduate students who took an evidence based practice module as part of their MRes coursework.

Methods – Information skills (IS) were taught in weeks two and three of a 12-week module on evidence based practice. Each of the two IS sessions lasted approximately three hours. At the beginning of the first session, baseline skills were assessed by asking the students to perform a literature search on either the effectiveness of nursing interventions for smoking cessation, or the effectiveness of rehabilitation after stroke. The OVID *MEDLINE* tutorial was introduced at the first session, and guided hands-on practice was offered. Homework was given, and between-session use of the tutorial was encouraged. At the end of the second session, students were asked to complete another search in order to assess short-term impact of the tutorial. Both sets of search results were scored using a checklist rubric that looked for Boolean

operators, use of MeSH terms, use of limits, number and relevance of references, and other assessment criteria. The rubric was a modified version of a tool published by Rosenberg et al.

The tutorial remained available throughout the 12-week module, at which time a systematic literature review was assigned in order to measure longer-term impact. As an additional subjective measurement, a questionnaire regarding the information skills sessions and tutorial was given at the end of the second IS session (week 3).

Main Results – Thirteen objective assessments (literature search results) were returned and usable. According to the scored pre-training search, two students could use multiple search techniques correctly and in a systematic manner. The post-training search results indicated that six students could systematically search, which is triple the original number. At the end of the 12-week EBP module, that number had increased to seven students. This demonstrated a significant difference between pre-training and post-training scores ($P = 0.040$), as well as a significant difference between post-training and post-module scores ($P = 0.008$).

Eight of the subjective questionnaires, which measured perceptions on a five-point scale, were returned. All responses indicated that "the sessions were useful, well structured and interesting" (83). Seven of the eight were entirely positive, either agreeing or strongly agreeing with each of the eleven questions about things such as search skill improvement, information skills knowledge, and confidence in searching. The small sample size made it difficult to generalise these results. Ad hoc comments varied and sometimes contradicted each other, such as one request for simpler tutorial instructions in contrast with the comment that the "tutorial 'couldn't be simpler'" (84).

Conclusions – Students rated the IS sessions positively, including the Web-based *MEDLINE* tutorial. Search skills improved, as was demonstrated by comparing pre-training search results with post-training and end-of-module searches. Continuing feedback indicates that the tutorial is used within other departments and programs as a standalone tutorial.

Commentary

This study was evaluated using The University of Glasgow critical appraisal checklist for educational intervention studies. The study authors provided two focused questions they intended to answer. They also did a good job of describing the learning need for an intervention: "Information skills (IS) are essential for healthcare students if they are to…become qualified evidence based practitioners" (79). The intervention and assessment measures were explained in sufficient detail.

The biggest problem with the study is that the research questions were specific to the interactive Web-based tutorial, but it was not possible to separate the effects of the tutorial from the effects of the face-to-face instructional sessions offered in conjunction with the tutorial. Even the subjective questionnaire, a copy of which was offered as an appendix to the published study, asked most of its questions about the IS training in general rather than about the Web tutorial.

This shows that the single cohort study was not the best study design to measure the effects of the tutorial. Comparing an experimental group – one offered the IS sessions *with* the tutorial – with a control group taking the IS sessions *without* the tutorial would have been a more effective way to measure chosen outcomes. The authors acknowledged the following limitations: the limited ability to generalise

results due to the small number of students; the lack of a control group; and the need to test the tutorial with a larger group to see if facilitator-to-student ratio affects results.

The authors stated, "Findings indicate that the use of this tutorial to complement taught sessions … in conjunction with the availability of guided feedback have a greater impact on [information skills] development" (85). It is unclear what intervention has the lesser impact if this one has the greater. Unfortunately, without a comparison intervention this statement lacks credibility.

There is a preponderance of existing literature documenting the "no significant difference" phenomenon. A 2001 book by Thomas Russell, and its ongoing companion Web site, provide an evidence based look at outcomes of face-to-face versus distance instruction and find *no significant difference* in learner outcomes. This is not to say that there are no studies which document a difference in outcomes, but that factors beyond the delivery medium usually influence whether or not face-to-face or distance delivery is more effective.

Instructional librarians and developers of information literacy tutorials need future research identifying those characteristics that make Web-based information literacy instruction more or less effective. Do student characteristics come into play? Should researchers examine educational background, gender or age in relation to outcomes in Web-based instruction? Do the multimedia elements affect outcomes? How should information literacy instruction be "chunked" for maximum learning effectiveness? Stronger randomised controlled trials, rather than single case studies, are needed to fully explore these and other related research questions.

Works Cited

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