

# A protocol for literature triage in online learning for the net-generation nursing and allied health care students

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## Abstract

Nursing and allied health care students use online learning resources with their own perspective of learning, often combined with curiosity. Although, students are overwhelmed with access to an enormous pool of information, we hypothesized that students may not possess the skills to appraise the merits of all online resources. Our pilot survey results have shown that students' knowledge of literature appraisal is inadequate. Circumventing this barrier requires adopting a three-phase protocol for literature triage such as: selection, appraisal, and critical reading. These skills would facilitate assessing all aspects of the literature, and identifying the best learning material.

## Introduction

Reading has many purposes that may include general awareness, pleasure and learning. All of us are different in our habits of reading and learning, and not consistent about how we differ in learning. Present day students of nursing and allied health care do not depend on teachers in the way students have learnt in the past.

Students use online learning resources with their own unique perspective of learning, which is often combined with curiosity, competition and recognition. Developments in digital technology have provided not only access to an enormous pool of information but also there has been an exponential rise in the volume of literature that is rapidly streamed in to the World Wide Web. Students are overwhelmed by academic journal publications, conference presentations, audio visuals (podcasts, webinars), medical images and drug information literature. Yet, there are concerns that students may not possess the skills to appraise the merits of all online resources. The purpose of this article is to familiarize the students of nursing and allied health care profession with the process of literature triage protocol through a demonstration in their foundation semester of nursing and allied health programs. Briefly, a literature

triage is a method to sort literatures to the learners needs and benefit from the use of selected literatures by adopting a three-phase protocol of selection, appraisal and critical reading of the literature.

This brief report defines *online learning* and describes the various online learning resources available; analyses the pilot survey results of students' knowledge on online learning resources; and suggests a three-phase protocol for literature triage.

## Online learning

Online learning is the most recent evolution from distance learning and e-learning.<sup>1</sup> This learning has a modernistic access to learning experiences via the use of technology and is thoroughly *online* as described in the *educating the net generation* by Diana and James Oblinger (<http://net.educause.edu/ir/library/pdf/pub7101.pdf>). Online learning has a connectivity, flexibility and ability to promote varied interactions, and can either be self paced or self directed and provides more autonomy to the learner. Some of the common online learning sources are categorized as *Journal Articles*:

- i) Literature Databases: CINAHL, Medline - PubMed, EMBASE, OVID, etc.;
- ii) Evidence based practice (EBP) sources: Cochrane Library (<http://www.cochrane.org/>), Nursing Reference (Centre <http://www.ebscohost.com/biomedical-libraries/nursing-reference-center>), Bandolier (<http://www.medicines.ac.uk/bandolier/knowledge.html>), Campbell Library (<http://www.campbellcollaboration.org/>);
- iii) University Digital Library services such as Digital Library, ProQuest and Clinical Key.

Professional bodies/societies, for examples:

- i) American Nurses Association, Nursing and Midwifery Council UK, Canadian Physiotherapy Association, Society of Nuclear Medicine and Molecular Imaging;
- ii) Professional Conference sites, Youtube, Webinar, and Podcasts;
- iii) Research gate, LinkedIn, Facebook, and Twitter.

Popular resources: Wikipedia, Google, Google Scholar, Google Trends, Google Images.

International organization sites, such as World Health Organization (WHO), World Bank, International Monetary Fund, Food and Agriculture Organization, United Nations Development Program, and WHO Eastern Mediterranean Regional Office.

## Students' pilot survey

Students' knowledge on online learning resources was assessed by a pilot survey, car-

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Key words: Allied health; literature appraisal; nursing; online learning; protocol.

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ried out in the College of Health Sciences, University of Bahrain, Bahrain. Fifty students enrolled in nursing (N=212) and other allied health sciences programs (N=97) were conveniently chosen and provided with a self administered questionnaire on: the preferred method of learning; their ability to distinguish between distance learning, e-learning, and online learning; ranking of online learning resources from introductory port of learning to advanced port of learning from the list provided, and ranking of online learning resources according to their academic quality from the list provided. For instance, the list for the introductory to advanced port of learning may include: i) Wikipedia/Google; ii) Journal articles from CINAHL/PubMed/EMBASE/OVID; iii) Evidence based literary resources from Cochrane library/Nursing Reference/Campbell/ Bandolier.

Similarly, the list for ranking according to increasing academic quality can include: i) Letter to the Editor; ii) Short communication, Commentary; iii) Original research; iv) Editorial narrative review; v) Systematic review.

The response rate for the pilot survey was 100%. Results indicated that 66% of the stu-

dents preferred text book learning, 26% preferred web-based learning and 8% preferred other methods of learning such as handouts and lecture notes. Seventy-eight percent of the students were able to distinguish distance learning, e-learning, and online learning. To the knowledge on introductory part of learning only 16% correctly identified, whereas, 50% of the participants identified advanced parts of learning such as EBP sources. To the knowledge on the hierarchy of online learning resources according to their academic quality,<sup>2</sup> between 10 and 20% of the participants identified each of the choices correctly. In summary, our results showed that students' knowledge on literature appraisal was inadequate.

## Protocol for literature triage

A literature triage is a process of sorting literature based on the needs and likely benefits from the use of selected literatures. Results of our pilot survey indicated that students were lack of adequate skills to appraise the literature. Circumventing this barrier requires adopting a three-phase protocol for literature triage (Figure 1), including: i) selection; ii) appraisal; and iii) critical reading.<sup>3</sup>

These skills facilitate assessing all aspects of the literature, and source the best learning materials. Briefly, *Selection* means the appropriate use of the right search terminology and strategy in locating the literature, e.g., Boolean operators (AND, OR, NOT) used in PubMed,<sup>4</sup> e.g., (anemia) AND iron supplement for a broader-scope searching iron-deficiency types of anemia.

An *Appraisal* of an article is an art, which may be carried out for validity using READ - an abridged acronym of READER<sup>5</sup> - on the four steps: first, *R* for relevance, that is, each article should be assessed within the learner's context and may be determined by scanning the title and summary/abstract; second, *E* for education, that is, each article should be assessed within the learner's context of behavior modification, and may be determined by scanning the title and summary/abstract that could change behavior; third, *A* for applicability, which should be assessed by: *Is the article applicable to the learner's professional interest?*; and lastly, *D* for discrimination, which should be assessed by: *Is the message valid?*. The message in an article may be relevant and can change behavior by challenging current knowledge and applicable but it may be lacking of validity. Statistical inadequacies, publication bias and low rigor and scientific procedure of reviewers' assessments are some of the reasons for validity deficiency in studies being published in some research journals.

Finally, *Critical reading* is the process of

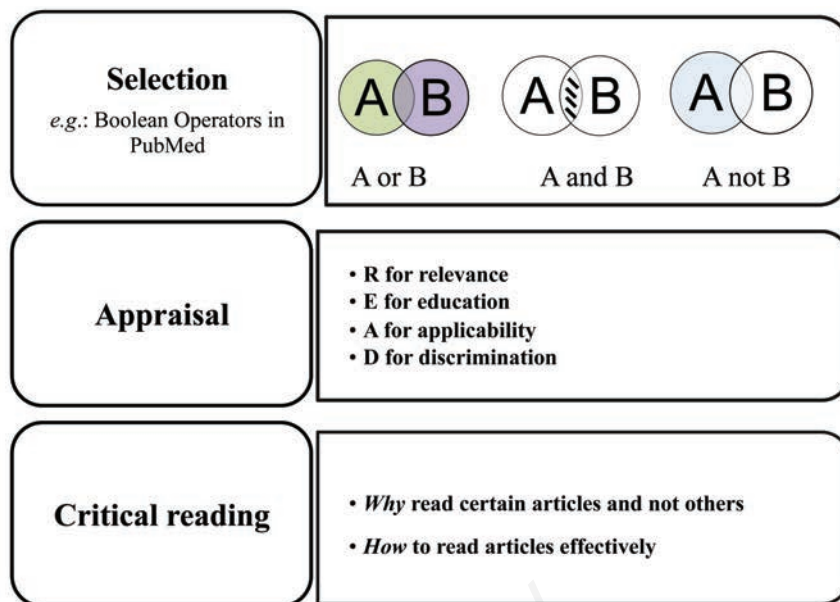


Figure 1. Protocol for literature triage.

metabolizing the contents, which has two major components, namely, *why* and *how*; that is, why certain articles are alone read than others and how to read articles effectively. Critical reading, as described by Dan Kurland (*What is critical reading?*; <http://www.criticalreading.com>), is to recognize not only *what* a text conveys but also *how* that text illustrates the subject matter. After recognizing what a text *conveys*, the next step is to reflect on what the text *does* by making such opinions: *Does it offer examples?*; *Make wise arguments?*; and *Does it compare to clarify a point?*. Finally, critical reading is to infer what the text means as a whole.

## Conclusions

Online learning is a limitless and convenient method of learning. We hypothesized that students might not possess the essential skills to appraise the merits of all online resources. Our pilot survey results had shown that students' knowledge on literature appraisal was inadequate. Although our results were from a small convenience sample of students currently enrolled in nursing and allied health sciences programs offered in the college of health sciences at University of Bahrain, we opined that the results across a wide variety of nursing and allied health care students might not differ much. To our knowledge this was the first study of this nature in our Gulf Cooperation Council region. Nonetheless, a large scale study with other important variables related to discipline-

specific learning such as the target discipline/s, course intended learning outcomes of nursing and each of the allied health programs, year of study, access to online learning resources and demographic variables may give more insights into the barriers to online learning that current generation of students are facing. Facilitating this current net-generation of nursing and allied health sciences students to use online learning, a literature triage protocol described in this article would enable the learner to discriminate the quality or appropriateness of the learning resources, facilitate assessing the literatures, and choose the best resource for the intended learning purposes or outcomes.

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