Using Canvas to Teach Literature Search Techniques in CINAHL & PubMed to Nursing Students

Background

At the University of California, Irvine, Sue & Bill Gross School of Nursing, students begin formal training in their junior year. One of the first courses, "Frameworks for Professional Nursing Practice," focuses on "the scope and standards of professional nursing practice." Students must complete a paper on a chosen clinical and ethical issue in the nursing profession. Successful completion of this project requires the ability to search the published nursing and medical literature and retrieve relevant information.

Since 2007, in cooperation with the course instructor, the Research Librarian in Nursing Science has prepared an assignment for students consisting of a literature search in PubMed and CINAHL for their topic. This assignment followed an in-class instruction session.

The goal is twofold: to help prepare students for the work needed to complete the main course assignment, and to familiarize them with the databases and literature search process. Submitted worksheets are reviewed by the librarian who provides feedback to each student.

Worksheet Submission by Email – 2007-2014

For the first version of this assignment, each student was required to send their completed assignments via email to the librarian based on a template distributed during the instruction session.

Using both PubMed and CINAHL, students were asked to find 2 articles from each database appropriate for their topic. The articles were to be in the English language, and published in the last 10 years.

Students supplied the complete citation for each article, and the final search strategy for both databases.

Depending on the faculty member responsible for the course, students were allowed to choose their own topics, or choose from a supplied list. Examples of topics included:

- Obesity in Pregnancy and the Risk of Pre-eclampsia
- Do-Not-Resuscitate Orders and Living Wills
- The Role of Nurses in Healthcare Reform in the United States
- The Impact of Nurse-Physician Communication/Relationship on Patient Care
- The Impact of Patient-Provider Communication/Relationship on the Quality of Care
- The Ethics of Organ Donation in the United States
- Mandatory Flu Vaccination for Healthcare Workers
- Effect of Nurse-patient Ratios on Patient Care and Outcomes
- Issues Surrounding Genetic Screening and Health Insurance
- The Effect of Nurses' Job Satisfaction on the Quality of Patient Care

The assignment was graded on a 10 point scale: 2 points for each section. Points were based on the complexity of the topic, the appropriateness of the search keywords, and the relevance of the articles selected. Those students receiving 4 points or were required to meet with the librarian for a refresher.

Advantages

- Simple template for students to follow.
- No need to create an online worksheet; revision was easy.

Challenges

- Each email needed to be copied and pasted into a Word document to facilitate feedback.
- Each submission took a considerable amount of time to grade and provide feedback.
- Graded worksheet with feedback had to be emailed back to each student.
- Some emails were missed.
- It was up to each student to create an email, and some students did not follow the template.
- Many students did not follow best searching practices or complete the worksheet properly despite instructions handed out in class.
- Based on subsequent interactions with students, the assignment did not always achieve the goal of teaching basic search techniques.

Worksheet Submission Online via Library Website – 2015-2016

In 2015, it was decided to create an online worksheet based on those used for the third-year medical student pediatric and family medicine clerkships. This was hosted on the UCI Libraries' website. Students were provided instructions both in class and on the worksheet itself.

As with the previous assignment, students were asked to find 2 articles (in the English language, and published in the last 10 years) each from PubMed and CINAHL. The complete citation for each article, the final search strategy including the number of results, and any filters or limits used for both databases were required as well.

Students were allowed to choose their own clinical or ethical topic from a vignette found in one of two of the required textbooks.
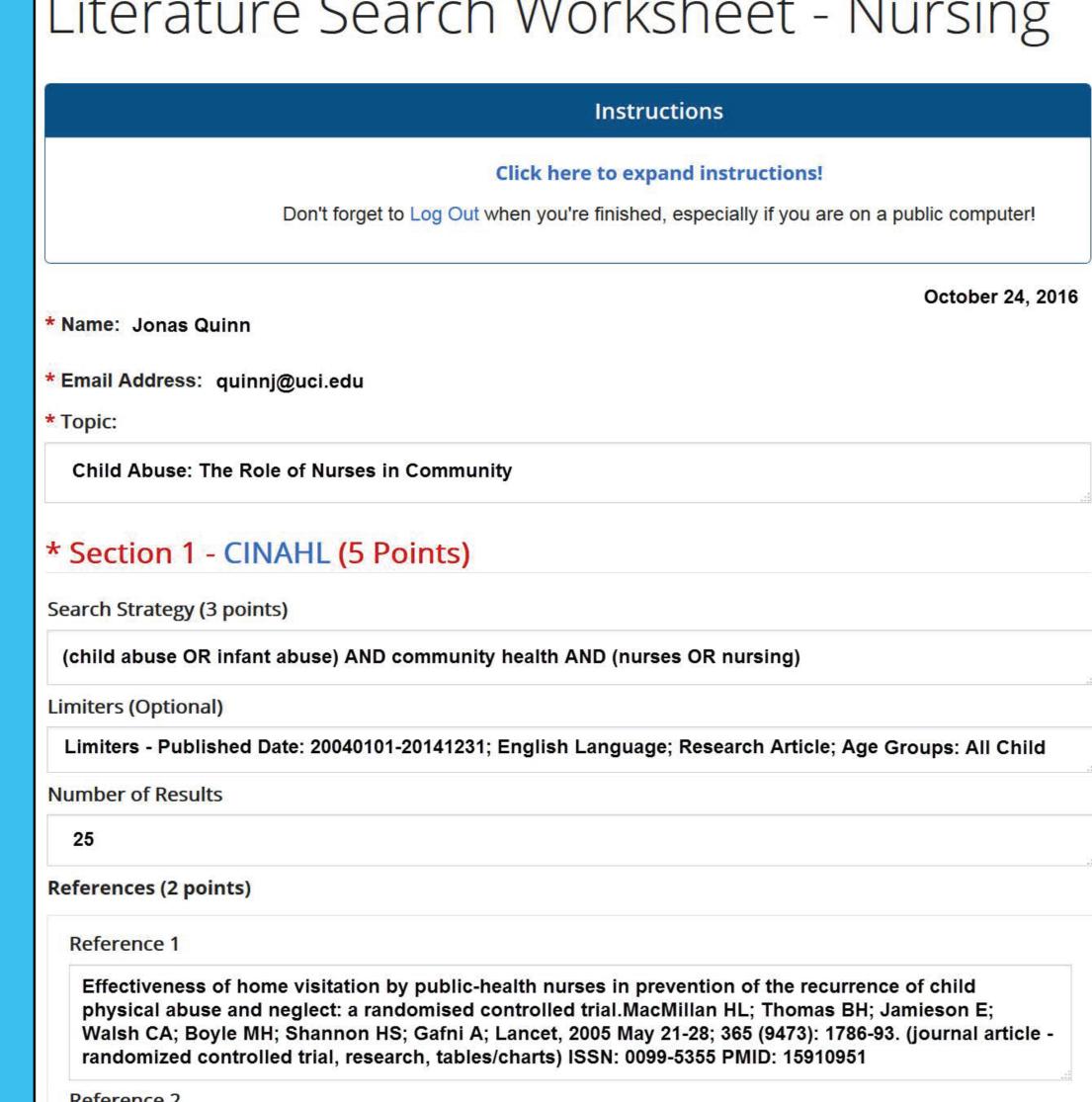
Due to several issues with previous submissions, the following was emphasized:

"Your topic should not be too narrow, or too broad. "Nursing's role in obesity prevention in Santa Ana schools" is an example of a topic that is so narrow that there is likely not much, if any, published research to be found. "Nursing in hospitals" is an example of a topic that is so broad that searching in the databases would retrieve tens of thousands of articles."

"The articles that you find should reflect current, in-depth research on your topic. Examples of acceptable article types include original research studies, review articles, systematic reviews, and practice guidelines. They should NOT be editorials, letters to the editor, commentary, news items, brief reports, anecdotes, book chapters, etc."

"This is meant to be an individual assignment; no group work allowed. Competency in searching the published nursing and medical literature is the goal."

Literature Search Worksheet - Nursing

Instructions

Click here to expand instructions!

Don't forget to Log Out when you're finished, especially if you are on a public computer!

October 24, 2016

* **Name:** Jonas Quinn
* **Email Address:** quinnj@uci.edu
* **Topic:**
  Child Abuse: The Role of Nurses in Community

* Section 1 - CINAHL (5 Points)

Search Strategy (3 points)

(child abuse OR infant abuse) AND community health AND (nurses OR nursing)

Limiters (Optional)

Limiters - Published Date: 20040101-20141231; English Language; Research Article; Age Groups: All Child

Number of Results

25

References (2 points)

Reference 1

Effectiveness of home visitation by public-health nurses in prevention of the recurrence of child physical abuse and neglect: a randomised controlled trial. MacMillan HL; Thomas BH; Jamieson E; Walsh CA; Boyle MH; Shannon HS; Gafni A; Lancet, 2005 Nov 25-Dec 2; 365 (9473): 1786-93. (journal article - randomized controlled trial, research, tables/charts) ISSN: 0099-5355 PMID: 15910951

Reference 2

Predicting child abuse and neglect: ethical, theoretical and methodological challenges. (includes abstract) Taylor J; Baldwin N; Spencer N; Journal of Clinical Nursing, 2008 May; 17 (9): 1193-200. (journal article - research, tables/charts) ISSN: 0962-1067 PMID: 18416795

* Section 2 - PubMed (5 Points)

Search Strategy (3 points)

child abuse AND (community health OR public health) AND (nurses OR midwives)

Filters (Optional)

Filters: Clinical Trial; Comparative Study; Observational Study; Practice Guideline; Review; published in the last 10 years; English; Child: birth-18 years

Number of Results

84

References (2 points)

Reference 1

Altman RL, Canter J, Patrick PA, Daley N, Butt NK, Brand DA. Parent education by maternity nurses and prevention of abusive head trauma. Pediatrics. 2011 Nov;128(5):e1164-72. doi: 10.1542/peds.2010-3260. Epub 2011 Oct 24. PubMed PMID: 22025587.

Reference 2

Lazenbart A. Safeguarding children and public health: midwives' responsibilities. Perspect Public Health. 2010 May;130(3):118-26. PubMed PMID: 20642128.

NOTES: Click Save to save your work for later. Click Submit to send your completed worksheet to the UCI Libraries' Health Sciences Education Team.

Worksheet adapted from the Evidence-Based Medicine Toolkit, University of Alberta, Alberta, Canada. 2006

[Save] [Submit]

SAMPLE SUBMITTED WORKSHEET

Subject: Nursing Science 110W Assignment
Date: Fri, 30 Sep 2011 18:05:52 - 0700
From: Patricia Anteater <panteater@uci.edu>
To: Steve Clancy <sclancy@uci.edu>

NAME: Patricia Anteater
Email Address: panteater@uci.edu
TOPIC: Look-alike/Sound-alike Drugs and Medication Errors. (2 points)

CINAHL:
Search Strategy: (2 points)

(look-alike OR sound-alike) AND medication errors
Limiters - Published Date from: 20010101-20111231; English Language

References: (2 points)
1. Patient safety first. Confusing, look-alike, and sound-alike medications. Beyea SC; AORN Journal, 2007 Nov; 86 (5): 861-3 (journal article) ISSN: 0001-2092 PMID: 17998006

2. Don't confuse look-alike, sound-alike drugs in ED: use 'multiple checks and balances' to avoid errors.(includes abstract); ED Nursing, 2007 Jan; 10 (3): 32-3 (journal article) ISSN: 1096-4304

PUBMED:
Search Strategy: (2 points)

(sound-alike OR look-alike) AND drugs AND medication errors
Limits: English, published in the last 10 years Sort by: PublicationDate

References: (2 points)
1. Kovacic L, Chambers C. Look-alike, sound-alike drugs in oncology. J Oncol Pharm Pract. 2011 Jun;17(2):104-18. Epub 2010 Jan 29. PubMed PMID: 20118216.

2. Lambert BL, Dickey LW, Fisher WM, Gibbons RD, Lin SJ, Luce PA, McLennan CT, Senders JW, Yu CT. Listen carefully: the risk of error in spoken medication orders. Soc Sci Med. 2010 May;70(10):1599-608. Epub 2010 Feb 17. PubMed PMID:20207461.

Advantages

- Online, standardized template for students to use.
- Easy to verify submissions; no need to email each student.

Challenges

- No way to provide feedback online; each submission still needed to be copied and pasted into a Word document, and then emailed back to student with feedback.
- Each submission STILL took a considerable amount of time to grade and provide feedback to each student.
- Many students did not follow best searching practices or complete the worksheet properly despite instructions handed out in class, and present in the worksheet.
- The assignment did not always achieve the goal of teaching proper search techniques.

Worksheet Submission Online via Canvas – 2017

With the adoption of the Canvas learning management system (LMS) at UCI in 2016, the assignment was reconfigured to make it more accessible to students and to bring it in line with other Nursing School course assignments. Many of the features were based on a similar worksheet that had been designed previously for a medical school course.

Canvas (https://www.canvaslms.com/) contains the core LMS features instructors are familiar with, such as a grade book, message boards, quizzes, file sharing, and the ability to post a variety of course content. Canvas supports a wide variety of pedagogical styles, and provides the tools needed for traditional classes, flipped and hybrid environments, and classes that are fully online. Many other University of California campuses are already using or piloting Canvas.

Two "Quizzes" were created on Canvas.

- Quiz #1 was a 20 question, automatically-graded quiz was created to teach a few basic facts about the published medical/nursing literature and the mechanics of finding it using CINAHL and PubMed.

  The goal for this quiz was to impart the information in the most painless way possible. Each question contained short introductory text or a video which provided the information necessary to answer the question.
- Quiz #2 was a retooling of the previous online worksheet containing 5 questions.
- Students were informed about the assignment during the in class library session and in the course syllabus.

Quiz #1 Introduction to CINAHL & PubMed: Instructions to Students

PubMed@UCI is an important medical literature database containing over 27 million citations that cover medicine, nursing, dentistry, and other health-related fields. PubMed has many options that allow you to focus and refine your search strategy and search results. PubMed is a freely accessible resource, however PubMed@UCI has additional features that will allow you to locate the full text of articles more easily.

CINAHL Plus with Full Text (Cumulative Index of Nursing and Allied Health Literature) is a premier database for the nursing profession containing over 5.3 million records, and includes more than 5,000 journals with full text articles for more than 770. It also contains full-text evidence-based care sheets, quick lessons and continuing education modules.

One of the goals of this online assignment is to ensure that UCI nursing students are familiar with both CINAHL and PubMed and will use them to search the published literature effectively. This is a critical skill that will serve you throughout your career. This quiz is meant to be a learning experience.

Each student will have up to two chances to take this required 20-question quiz. Many questions include the link, "Click here for more info" or "For more info, watch the video below" providing more information on how to use these resources more efficiently. These short tutorials will help lead you to the correct answer. In addition, explanations of correct and incorrect answer choices can be reviewed once the quiz is submitted.

To maximize your test score, it is recommended that you view the tutorials before you provide answers to the questions. Some users with the Safari web browser may have difficulty watching the videos. If this occurs, please use a different browser, such as Chrome.

Question 1   0.25 pts

There are two types of questions often asked regarding clinical topics: General and Focused. For each example below, please select the correct type: Click here for more info.

"What are the symptoms of sickle cell disease in children?"   [Choose]

"In children with sickle cell anemia, is the prognostic significance of frequent episodes of acute chest syndrome, compared to no episodes, on the probability of survival at age forty?"   [Choose] / Focused / General

Question 2   0.25 pts

Which of the following citations represents a primary source (original research)? (Check all that apply) Click here for more info

☐ Case report: pericardial effusion with constrictive physiology in a patient with wet beriberi. Yamamura M, Murai H, Kaneko S, Usui S, Furusho H, Takamura M. Nutr J. 2016 Apr 8;15:37. doi: 10.1186/s12937-016-0156-y. PMID: 27059308

☐ A randomized, placebo-controlled trial of arginine therapy for the treatment of children with sickle cell disease hospitalized with vaso-occlusive pain episodes. Morris CR, Kuypers FA, Lavrisha L, Ansari M, Sweeters N, Stewart M, Gildengorin G, Neumayr L, Vichinsky EP. Haematologica. 2013 Sep;98(9):1375-82. PMID: 23645695

☐ Associations between characteristics of the nurse work environment and five nurse-sensitive patient outcomes in hospitals: a systematic review of literature. Stalpers D, de Brouwer BJ, Kaljouw MJ, Schuurmans MJ. Int J Nurs Stud. 2015 Apr;52(4):817-35. doi: 10.1016/j.ijnurstu.2015.01.005. Epub 2015 Jan 15. Review. PubMed PMID: 25655351.

☐ Do prolonged primary transport times for traumatic brain injury patients result in deteriorating physiology? A cohort study. Fuller G, Woodford M, Lawrence T, Coats T, Lecky F. Prehosp Emerg Care. 2014 Jan-Mar;18(1):60-7. PMID: 24112033.

Question 7   0.25 pts

You ran a PubMed search to look for articles on the topic "the efficacy and safety of deferoxamine for patients with sickle cell anemia." Which of the following can be used in a PubMed search to connect multiple search concepts?

Click here for more info, and for additional information, watch the video below. (Click HERE to view the video transcript)

○ *, -, ~
○ AND, BUT, WITHOUT
○ and, or, not
○ AND, OR, NOT

Question 8   0.25 pts

Based on the tutorial in the previous question, which of the search strategies below represent the best way to search PubMed for "The efficacy of probiotics vs. placebo to prevent recurrent UTI in adult patients?"

○ urinary tract infections AND probiotics AND placebo NOT pediatrics OR children
○ What is the efficacy of probiotics vs. placebo to prevent recurrent UTI in adult patients?
○ (uti OR urinary tract infections) AND probiotic OR probiotics) AND adult
○ (uti OR urinary tract infections) AND (probiotics OR probiotic) AND adult

Quiz #2: Conducting a Literature Search in PubMed & CINAHL

The object of this assignment was to allow students to practice basic searching skills and identify two research articles from both CINAHL Plus with Full Text and PubMed relevant to the clinical or ethical issue they chose.

Guidelines as to the acceptable article types (in-depth research, not editorials, letters to the editor, commentaries, news items, brief reports, pamphlets, anecdotes, book chapters, etc.), and the appropriateness of their topics (not too narrow or broad) were the same as in previous years.

Question 1   1 pts

What is your research topic? (Be sure that your topic is not too narrow, or too broad)

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A Text Editor Appears for Each Question

Conduct a search in the PubMed database and identify two research articles relevant to your topic.

You will be evaluated partially on how well your PubMed search strategy matches the concepts in your topic.

Please:

1. Based on your chosen topic, run a literature search in PubMed.
2. After the search returns with the results, apply other PubMed Filters as you see fit, e.g., Publication Dates, Language, Article Types, Ages, etc.
3. When you are satisfied with the search results, click on "Advanced" (located under the PubMed search box). Copy and paste the search strategy that you used to find the articles from the PubMed History section to the appropriate Text Box below. Be sure to include, any filters you applied, and the number of results retrieved.
4. Identify two research articles published in the English Language, in the last 10 years, that are highly relevant to your topic.
5. Copy and paste the full citation and abstract to the appropriate Text Box below. Use the "Abstract (text)" from the drop down "Format" menu under the search box.

Question 2   1 pts

Copy and paste your PubMed search strategy from the PubMed History. If you ran more than one search to find your two articles, include each of the search strategies.

Click here for instructions.

Question 3   1 pts

Copy and paste two complete citations including author(s), article title, journal information, PMID, DOI (if available), and the abstract of the best research evidence you found from PubMed. (Note: a few articles may not have an abstract. If that's the case, just copy the full citation).

The research articles you choose should be relevant to your topic.

Click here for instructions.

Conduct a CINAHL search and identify two research articles relevant to your topic.

1. Based on your chosen topic, run a literature search in CINAHL Plus with Full Text.
2. Apply any CINAHL Limiters as you see fit, e.g., Publication Date, Language, Source Types, Research Article, Peer Reviewed, Age, etc.
3. When you are satisfied with the search results, click on "Search History" (located under the search boxes). Copy and paste the "Search Terms," "Search Options," and the number of results for the search(es) that produced your best results to the appropriate Text Box below.
4. Identify two research articles published in the English Language, in the last 10 years, that are highly relevant to your topic.
5. Copy and paste the full citation with abstract to the appropriate Text Box below.

Question 4   1 pts

Copy and paste your CINAHL search strategy from the "Search History." If you ran more than one search to find your two articles, include each of the search strategies.

Click here for instructions.

Question 5   1 pts

Copy and paste two complete citations including the author(s), article title, journal information, abstract, and other information of the best research evidence you found from CINAHL. (Note: a few articles may not have an abstract. If that's the case, just copy the full citation).

The research articles you choose should be relevant to your topic.

Click here for instructions.

Advantages

- The quiz was more integrated with the coursework, and seen by students as just another course assignment rather than something separate.
- Quiz #1 was automatically graded by the Canvas system and, based on most students' performance on Quiz #2, seemed to serve the purpose of teaching the fundamentals.
- Canvas allows the embedding of documents and media (videos) to provide instruction for eachquestion as needed.
- Canvas allows feedback to be added for each correct or incorrect answer providing further feedback as students are taking the quiz.
- Students were allowed to take each quiz up to 2 times. The goal was education, not a grade.

Challenges

- Each submission STILL took a considerable amount of time to grade and provide feedback.
- Feedback was initially not visible to students due to the librarian's inexperience with Canvas.

Survey Given at the End of the Quizzes

Results for Effectiveness of the Library Assignments

Responses to 7 questions
# of submissions: 11
# of possible respondents: 56

1. "I felt confident in my ability to search the medical and nursing literature BEFORE completing these two assignments."
   - 9% Strongly Agree
   - 18% Agree
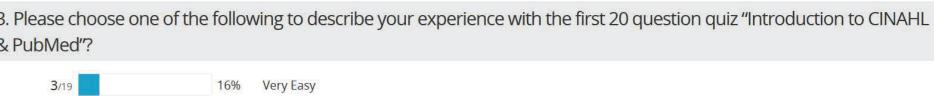   - 9% Neither Agree or Disagree
   - 9% Disagree
   - 0% Strongly Disagree

2. "I feel confident in my ability to search the medical and nursing literature AFTER completing these two assignments."
   - 5% Strongly Agree
   - 47% Agree
   - 0% Neither Agree or Disagree
   - 0% Disagree
   - 0% Strongly Disagree

3. Please choose one of the following to describe your experience with the first 20 question quiz "Introduction to CINAHL & PubMed?"
   - 3% Very Easy
   - 16% Easy
   - 27% Neither Difficult or Easy
   - 9% Difficult
   - 0% Very Difficult

4. Was there anything in particular about this quiz that made you choose the above answer?
   - We had all of the answers, it was just a matter of looking it up.
   - the links were very straightforward and had all the answers, I didn't need to search
   - The tutorials that came with each of the questions made the quiz quite painless
   - I learned all of the material in the lesson so I was able to complete it with ease.
   - There were links provided that if I used, I thought we had to look up answers only instead of four.
   - I am still confused on what my topic should be. Also, I thought we had to look up articles only instead of four.
   - The only hard part was choosing what I wanted to research but using the database was relatively easy.
   - Straightforward and allowed us to practice the skills we learned in the previous assignment.
   - It was just difficult to be able to choose the correct things to search, not because I didn't learn but because I wanted to not make it too vague or too specific.
   - No, I was more consuming than I initially thought that it would be and I did not entirely understand the prompt at first.

5. Please choose one of the following to describe your experience with the second assignment, "Conducting a literature search in PubMed & CINAHL?"
   - 7% Very Easy
   - 3% Easy
   - 27% Neither Difficult or Easy
   - 7% Difficult
   - 0% Very Difficult

6. Was there anything about this quiz that made you choose the above answer?
   - My topic is a little obscure, so finding info was harder...
   - searching things using CINAHL is just new in general
   - There was some uncertainty as to which articles were appropriate research articles, and not simply review pieces
   - The evaluation on medical research helped me to browse through to find the best articles possible.
   - It was more consuming than I initially thought that it would be and I did not entirely understand the prompt at first.

7. Please add any other comments regarding one or both assignments.
   - As interesting as I think it could have been. But thank you so much for taking your time to help us become better researchers!
   - The workshop and the packet provided were tremendously helpful in bettering my understanding of the databases. Thank you, Mr. Clancy.
   - Clearer instructions would be better for the literature search assignment
   - The packet we received was very helpful! I know I'll be using it a lot throughout this quarter and probably also in the distant future.
   - YOU DID AN AWESOME JOB STEVE! (or I hope that's what your name was)

Future Directions & Options

Canvas Assignment vs. Quiz

- Creating an assignment has a few advantages over a quiz.
- The worksheet can be made available as a fillable PDF form which can be uploaded by the student when complete.
- Uploaded PDFs are viewable within Canvas and can be annotated with comments and highlighted in a similar fashion to markup within a Microsoft Word document. This makes the feedback provided by the librarian more easily accessible.
- Students are able to finish the PDF while offline and upload the file when finished negating the need for allowing multiple attempts.

Canvas Quiz plus Assignment

- The auto-graded 20 question quiz appeared to be fairly successful in imparting basic information to the students.
- The quiz coupled with a Canvas assignment may be a cleaner and less "cluttered" approach.
- The success of this new approach will not be realized until more feedback is available from the course instructor and student skill levels are further assessed.

CINAHL
Available via EBSCOhost

PubMed

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University of California, Irvine Libraries

UCI Libraries
lib.uci.edu